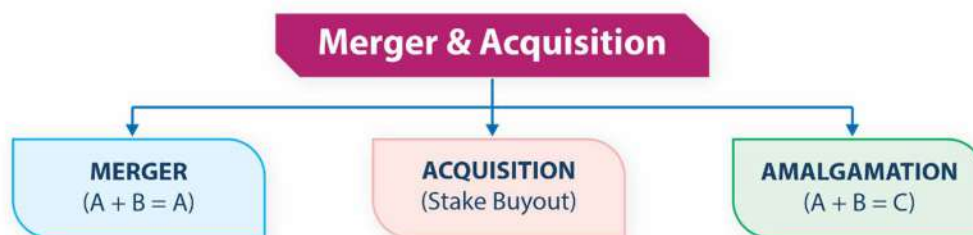


Mergers, Acquisitions & Corporate Restructuring

Study Session 4

LOS 1 : Introduction



Reasons for Merger & Acquisition

- ✚ Economies of Scale
- ✚ Efficiency Improvement
- ✚ Power of Market Share – Reduced Competition
- ✚ Tax Consideration
- ✚ Combining resources that are complementary
- ✚ Diversification

Types / Forms of Mergers

- ✚ Horizontal Merger
- ✚ Vertical Merger
- ✚ Conglomerate Mergers
- ✚ Reverse Merger

LOS 2 : Share Exchange Ratio/ Swap Ratio

Swap Ratio may be defined as No. of equity shares issued by Acquiring Company to Target Company for every one share held by Target Company.

Example:

If Swap Ratio = 2, it means that for every 1 share held by Target company, Acquiring Company will issue 2 shares.

Methods of Calculating the Swap Ratio (Positive Parameters) :

$$\text{Swap Ratio} = \frac{\text{Target Co.}}{\text{Acquiring Co.}}$$

1. On the basis of MPS

$$\text{Swap Ratio} = \frac{\text{MPS of Target Company}}{\text{MPS of Acquiring Company}}$$

2. On the basis of EPS

$$\text{Swap Ratio} = \frac{\text{EPS of Target Company}}{\text{EPS of Acquiring Company}}$$

3. On the basis of NAV per Share

$$\text{Swap Ratio} = \frac{\text{NAV of Target Company}}{\text{NAV of Acquiring Company}}$$

4. On the basis of Book Value per share

$$\text{Swap Ratio} = \frac{\text{BVPS of Target Company}}{\text{BVPS of Acquiring Company}}$$

5. On the basis of P/E Ratio

$$\text{Swap Ratio} = \frac{\text{P/E Ratio of Target Company}}{\text{P/E Ratio of Acquiring Company}}$$

Note:

$$\text{EPS} = \frac{\text{Earning available to Equity Shareholder}}{\text{Total number of equity shares}}$$

$$\text{NAV} = \frac{\text{Total Assets} - \text{Total External Liability}}{\text{Total number of equity shares}}$$

$$\text{P/E Ratio} = \frac{\text{Market Price per Share}}{\text{Earning Price per Share}}$$

Note:

If question is silent regarding the basis of calculation of swap ratio, Swap Ratio may be calculated using EPS or MPS as per the requirement of the question.

SWAP Ratio (Negative Parameters):

$$\text{Swap Ratio} = \frac{\text{Acquiring Co.}}{\text{Target Co.}}$$

$$\text{e.g. Swap Ratio based on NPA's} = \frac{\text{NPA of Acquiring Co.}}{\text{NPA of Target Co.}}$$

LOS 3 : Some Basic Concepts

1. Total Number of Equity Shares after Merger

$$\text{Number of Shares}_{A+B} = N_A + N_B \times \text{ER}$$

Example:

	A Ltd.	B Ltd.
No. of Shares	100000	50000

Calculate total no. of Equity Shares after Merger if Swap Ratio/ Exchange Ratio = 0.50?

Solution:

$$\begin{aligned} \text{Number of Shares}_{A+B} (T_{A+B}) &= N_A + N_B \times \text{ER} \\ &= 1,00,000 + 50,000 \times 0.50 \\ &= 1,00,000 + 25,000 = 1,25,000 \text{ shares} \end{aligned}$$

2. EPS after Merger or EPS_{A+B} or EPS of a Merged Firm/ Combined Firm

$$\text{EPS}_{A+B} = \frac{E_A + E_B + \text{Synergy Gain}}{N_A + N_B \times \text{ER}}$$

Example:

	A Ltd.	B Ltd.
Earnings	5,00,000	2,00,000
No. of Shares	100000	50000
Synergy Gain	1,00,000	
E/R	0.50	

Calculate:

- EPS of A Ltd. before Merger.
- EPS of B Ltd. before Merger.
- Total Earnings after Merger.
- Total No. of Equity Shares after Merger.

e) EPS after Merger or EPS_{A+B} .

Solution:

a) $EPS_{A Ltd.} = \frac{5,00,000}{1,00,000} = ₹ 5 \text{ per share}$

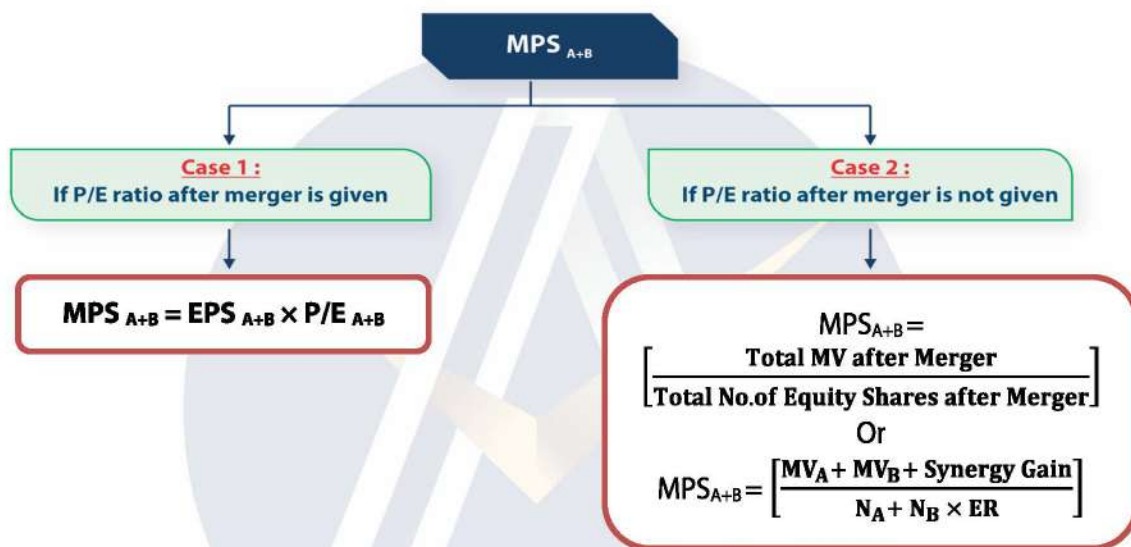
b) $EPS_{B Ltd.} = \frac{2,00,000}{50,000} = ₹ 4 \text{ per share}$

c) Total Earnings $_{A+B} = 5,00,000 + 2,00,000 + 1,00,000 = 8,00,000$

d) Total No. of Shares $_{A+B} = 1,00,000 + 50,000 \times 0.50 = 1,25,000$

e) $EPS_{A+B} = \frac{5,00,000 + 2,00,000 + 1,00,000}{1,00,000 + 50,000 \times 0.50} = 6.40$

3. MPS after Merger or MPS_{A+B} or MPS of a Merged Firm



Note:

- ✚ Answer by both alternative will be different.
- ✚ Alternative 1 should be preferred whenever any hint regarding P/E after merger is given in question.

4. Market Value of Merged Firm or MV_{A+B}

Alternative 1:

$$MV_{A+B} = MPS_{A+B} \times [N_A + N_B \times ER]$$

Alternative 2:

$$MV_{A+B} = MV_A + MV_B + \text{Synergy}$$

Note:

- ✚ Answer by both alternative will be different.
- ✚ Alternative 1 should be preferred

5. Equivalent EPS of Target Co. in Merged Firm

$$\text{Equivalent EPS of Target Co. in Merged Firm} = EPS_{A+B} \times ER$$

Example:

$EPS_{A+B} = 15$; E/R (given to B Ltd.) = 0.40

Calculate Equivalent EPS of B Ltd. in Merged Firm?

Solution:

Equivalent EPS of B Ltd. in Merged Firm = $15 \times 0.40 = ₹ 6$ per share

6. Equivalent MPS of Target Co. in Merged Firm

$$\text{Equivalent MPS of Target Co. in Merged Firm} = \text{MPS}_{A+B} \times \text{ER}$$

QUESTION NO. 2A

A Ltd. wants to acquire B Ltd. and has offered a swap ratio of 1:2 (0.5 shares for everyone share of B Ltd.). Following information is provided:

	A Ltd.	B Ltd.
Profit After Tax	₹ 18,00,000	₹ 3,60,000
Equity Shares Outstanding (Nos.)	6,00,000	1,80,000
EPS	₹ 3	₹ 2
P/E Ratio	10 times	7 times
Market Price per Share	₹ 30	₹ 14

Required:

- The number of equity shares to be issued by A Ltd. for acquisition of B Ltd.
- What is the EPS of A Ltd. after the acquisition?
- Determine the equivalent earnings per share of B Ltd.
- What is the expected market price per share of A Ltd. after the acquisition, assuming its PE multiple remains unchanged?
- Determine the market value of the merged firm.

Solution:

Q.2A

(a) No. of equity shares to be issued by A Ltd. for acquisition of B Ltd.:-

$$\text{S/R} = 0.5:1$$

$$\Rightarrow \frac{1,80,000 \times 0.50}{N_B \times \text{SR}} \Rightarrow 90,000 \text{ shares}$$

(b) EPS after acquisition:- (EPSA+B)

$$\text{EPS}_{A+B} \Rightarrow \frac{\text{E}_A + \text{E}_B + \text{S}_H}{N_A + N_B \times \text{SR}}$$

$$\Rightarrow \frac{18,00,000 + 3,60,000 + 0}{6,00,000 + 1,80,000 \times 0.50}$$

$$EPS_{A+B} \Rightarrow 3.130 / \text{Share} \checkmark$$

(c) Equivalent EPS of B Ltd:-

$$\Rightarrow \boxed{EPS_{A+B} \times S/R}$$

$$\Rightarrow 3.130 \times .50 \Rightarrow 1.565 / \text{Share}$$

(d) $MPS_{A+B} \Rightarrow EPS_{A+B} \times P/E_{A+B}$

$$\Rightarrow 3.130 \times 10 \text{ times}$$

$$\Rightarrow \text{₹ } 31.30 / \text{Share}$$

(e) $MVA_{A+B} \Rightarrow N_{A+B} \times MPS_{A+B}$

$$\Rightarrow [N_A + N_B \times S/R] \times MPS_{A+B}$$

$$\Rightarrow [6,00,000 + 1,20,000 \times .50] \times 31.30$$

$$\boxed{MVA_{A+B} \Rightarrow \text{₹ } 215,97,000} \checkmark$$

LOS 4 : Gain or Loss

- Merger may result into Gain/Loss for acquiring company & target Company.
- On the basis of EPS/MPS/Market Value (MV)

	A Ltd.	B Ltd.
MPS / EPS / MV after Merger	XXX	XXX
MPS / EPS / MV before Merger	XXX	XXX
Gain/ Loss	XXX	XXX

QUESTION NO. 3A

The following information is provided related to the acquiring Firm A Limited and the target Firm B Limited:

	Firm A Limited	Firm B Limited
Earning after tax (₹)	2,000 Lakhs	400 Lakhs
Number of shares outstanding	200 Lakhs	100 Lakhs

P/E ratio (times)	10	5
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Required:

- What is the Swap Ratio based on current market prices?
- What is the EPS of A Limited after acquisition?
- What is the expected market price per share of A Limited after acquisition, assuming P/E ratio of A Limited remains unchanged?
- Determine the market value of the merged firm
- Calculate gain/ loss for shareholders of the two independent companies after acquisition.

Solution:

Q.3A (4)

<u>W.No.1</u>	<u>A Ltd.</u>	<u>B Ltd.</u>
EAT	2000 Lakhs	400 Lakhs
No. of Shares	200 Lacs	100 Lacs
EPS	10/Share	4/Share
P/E Ratio = $\frac{MPS}{EPS}$	10 times	5 times
MPS	100/Share	20/Share

(a) S/R based on CMP:-

$$\Rightarrow \frac{MPS \text{ of B Ltd.}}{MPS \text{ of A Ltd.}} \Rightarrow \frac{20}{100} \Rightarrow 0.20:1$$

$$(b) \quad EPS_{A+B} \Rightarrow \frac{E_A + E_B + S_4}{N_A + N_B \times E/R}$$

$$\Rightarrow \frac{2000 \text{ lakh} + 400 \text{ lakh} + 0}{200 \text{ lakh} + 100 \text{ lakh} \times 20}$$

$$EPS_{A+B} \Rightarrow 10.91 / \text{Share}$$

$$(c) \quad MPS_{A+B} \Rightarrow EPS_{A+B} \times P/E_{A+B}$$

$$\Rightarrow 10.91 \times 10$$

$$\Rightarrow 109.10 / \text{Share}$$

$$(d) \quad MV_{A+B} \Rightarrow N_{A+B} \times MPS_{A+B}$$

$$\Rightarrow [200 + 100 \times 20] \times 109.10$$

$$\Rightarrow ₹ 24002 \text{ lakh} \checkmark$$

(e) Extra part: Not part of the solution

(i) G/L Based on EPS:-

	<u>Auto.</u>	<u>Delta</u>
EPS after Merge	10.91	10.91×20 $\Rightarrow 218.2$

EPS before Merge	10	4
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$$G = 0.91 / \text{Sh} \quad \text{Loss} = 1.818 / \text{Sh}$$

(ii) G/L Based on MPS:-

Auto. Delta.



$$\begin{array}{lll}
 \text{MPS after Merger} & 109.10 & 109.10 \times 20 \\
 & & \Rightarrow 2182 \\
 \text{MPS before Merger} & 100.00 & 20.00 \\
 G = \frac{9.10}{\cancel{\text{sh}}} & G = \frac{1.82}{\cancel{\text{sh}}}
 \end{array}$$

(e) G/L Based on Mkt. Value:-

$$\begin{array}{lll}
 & \text{ABC} & \text{XYZ} \\
 \text{MV after Merger} & \begin{array}{l} 200 \text{ sh} \\ \times \\ 109.10 \\ \hline \Rightarrow 21820 \text{ sh} \end{array} & \begin{array}{l} 100 \text{ sh} \\ \times \\ 20 \\ \hline = 20 \text{ sh} \times 109.10 \\ \hline \Rightarrow 2182 \text{ sh} \end{array} \\
 \text{MV before Merger} & \begin{array}{l} 200 \text{ sh} \\ \times \\ 100 \\ \hline \Rightarrow 20000 \text{ sh} \end{array} & \begin{array}{l} 100 \text{ sh} \\ \times \\ 20 \\ \hline \Rightarrow 2000 \text{ sh} \end{array} \\
 G = \frac{1820 \text{ sh}}{\cancel{\text{sh}}} & G = \frac{182 \text{ sh}}{\cancel{\text{sh}}}
 \end{array}$$

QUESTION NO. 3D

ABC Ltd. is a company operating in the software industry. It is considering the acquisition of XYZ Ltd. which is also into software industry. The following information are available for the companies:

	ABC Ltd.	XYZ Ltd.
Earnings after tax (₹)	9,00,000	2,40,000
Number of equity shares	1,50,000	60,000
P/E ratio (no. of times)	14	10

ABC Ltd. is planning to offer a premium of 25% over the market price of XYZ Ltd. Required:

- What is the swap ratio based on current market price?
- Find the number of shares to be issued by ABC Ltd. to the shareholders of XYZ Ltd.
- Compute the new EPS of ABC Ltd. after merger and comment on the impact of merger.
- Determine the market price of the share when P/E ratio remains unchanged.

- (v) Compute the market price when P/E declines to 12 and comment on the results. Figures are to be rounded off to 2 decimals.

Solution:

Concept:- Purchase Price Premium:- (PPP)

Target Co.

MPS = 100/Share

Acq. Co.

offer Price

₹ 120/Share

Premium $\Rightarrow 120 - 100 = \underline{\underline{₹ 20}}$

% Premium:- $\frac{\text{Change}}{\text{Base}} \times 100$

$\Rightarrow \frac{\text{offer Price} - \text{MPS of Target Co.}}{\text{MPS of Target Co.}}$

$\Rightarrow \frac{120 - 100}{100} \times 100 = \underline{\underline{20\%}}$

Impact:-

S/R (Based on MPS) :-

$S/R = \frac{\text{MPS of Target Co.}}{\text{MPS of Acq. Co.}}$ offer Price

0.30

W.No 1

ABC

XYZ

EAT	9,00,000	2,40,000
No. of Shares	1,50,000	60,000
EPS	6/Share	4/Share
P/E Ratio	14 times	10 times
MPS	<u>84/Share</u>	<u>40/Share</u>

(#) offer price $\Rightarrow 40 + 25\%$
 $\Rightarrow 50/\text{Share}$

(i) Cal. of S/R:- (Based on MPS)

$$S/R = \frac{\text{offer price}}{\text{MPS of ABC Ltd.}}$$

$$\Rightarrow \frac{50}{84} \Rightarrow \underline{0.60 : 1}$$

(ii) No. of eq. shares to be issued by ABC Ltd. to XYZ Ltd.:-

$$\Rightarrow 60,000 \times 0.60 \Rightarrow 36,000 \text{ Shares}$$

(iii) EPS after Merger:-

$$\Rightarrow \frac{9,00,000 + 2,40,000 + 0}{1,50,000 + 60,000 \times 0.60}$$

$$\Rightarrow \underline{6.13/\text{Share}}$$

Impact:- G/L (Based on EPS):-

	<u>ABC Ltd.</u>	<u>XYZ Ltd.</u>
EPS after Merger	6.13	6.13×0.60 $\Rightarrow 3.68$
EPS before Merger	6	4
	<u>G = 0.13</u>	<u>Loss = 0.32</u>

Thus, with the proposed merger, the EPS for SH's of ABC Ltd. will improve/increase

↳ EPS for Shareholders of XYZ Ltd. will be decreased.

(iv) MPS after Merger:-

$$\Rightarrow \text{EPS}_{ABC/XYZ} \times P/E_{ABC/XYZ}$$

$$\Rightarrow 6.13 \times 14 \Rightarrow 85.82/\text{Share}$$

(v) γ P/E Ratio after Merger = 12 times

$$\text{MPS after Merger} = 6.13 \times 12 \Rightarrow 73.56/\text{Share}$$

G/L (based on MPS) :-

	<u>ABC Ltd.</u>	<u>XYZ Ltd.</u>
MPS after Merger	73.56	$73.56 \times .60 = 44.14$

MPS before Merger	84.00	40.00
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$$\text{Loss} \Rightarrow 10.44 \quad \text{Gain} \Rightarrow 4.14$$

With the merger, there is a decrease in the Mkt. Price of Share for the SH's of ABC Ltd. & gain for SH's of XYZ Ltd.

QUESTION NO. 3F

B Ltd. wants to acquire S Ltd. and has offered a swap ratio of 2 : 3 (2 shares for every 3 share of S Ltd.) Following information is available:

Particulars	B Ltd.	S Ltd.
Profit after tax (in ₹)	21,00,000	4,50,000
Equity shares outstanding (Nos.)	6,00,000	1,80,000
EPS (in ₹)	3.5	2.5
PE Ratio	10 times	7 times

Price quoting per share on BSE before the merger announcement	35	17.5
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Required:

- The number of equity shares to be issued by B Ltd. for acquisition of S Ltd.
- What is the EPS of B Ltd. after the acquisition?
- Determine the equivalent earnings per share of S Ltd. and calculate per share gain or loss to shareholders of S Ltd.
- What is the expected market price per share of B Ltd. after the acquisition, assuming its PE Multiple remains unchanged?
- Determine the market value of the merged firm.
- After the announcement of merger, price of shares of S Ltd. rose by 10% on BSE. Mr. X, an investor, having 10,000 shares of S Ltd. is having another investment opportunity, which yields annual return of 14% is seeking your advice whether he needs to offload the shares in the market or accept the shares from B Ltd.

Solution:

0.3F

S/R = 2:3

(i) No. of equity shares ^{to be} issued by B Ltd.:-

$$\Rightarrow 1,80,000 \times \frac{2}{3} \Rightarrow 1,20,000 \text{ shares}$$

(ii) EPS after acquisition:-

$$\Rightarrow \frac{E_B + E_S + S_4}{N_B + N_S \times E/R}$$

$$\Rightarrow \frac{21,00,000 + 4,50,000 + 0}{6,00,000 + 1,20,000}$$

$E_{B+S} \Rightarrow \text{₹ } 3.54/\text{Share} \checkmark$

(iii) Equivalent EPS of S Ltd:-

$$\Rightarrow 3.54 \times \frac{2}{3} \Rightarrow \underline{2.36 \text{ / Share}}$$

G/L to S Ltd:-

$$\text{Eq. EPS after Merger} \Rightarrow 2.36$$

$$\begin{aligned} \text{(-) EPS before Merger} &\Rightarrow 2.50 \\ \text{loss} &\Rightarrow \underline{0.14} \end{aligned}$$

(iv) MPS after Merger:-

$$\Rightarrow \text{EPS}_{A+S} \times P/E_{A+S}$$

$$\Rightarrow 3.54 \times 10$$

$$\Rightarrow \underline{\underline{\text{₹ } 35.40 \text{ / Share}}}$$

(v) Market Value of the Merged firm:-

$$\Rightarrow \text{No. of Shares}_{A+S} \times \text{MPS}_{A+S}$$

$$\Rightarrow [6,00,000 + 1,20,000] \times 35.40$$

$$\Rightarrow \underline{\underline{\text{₹ } 254,88,000}}$$

(vi) Equivalent EPS of S Ltd $\Rightarrow \text{₹ } 2.36 \text{ / Share}$

$$\text{MPS before Merger} = 17.50 \text{ / Share}$$

$$\begin{aligned} \text{After Merger announcement} &\Rightarrow 17.50 \times 1.10 \\ 10\% \text{ Increase in Price} &\Rightarrow \underline{\underline{19.25 \text{ / Share}}} \end{aligned}$$

Return to SH's of S Ltd.

$$\Rightarrow \underline{2.36} \times 100$$

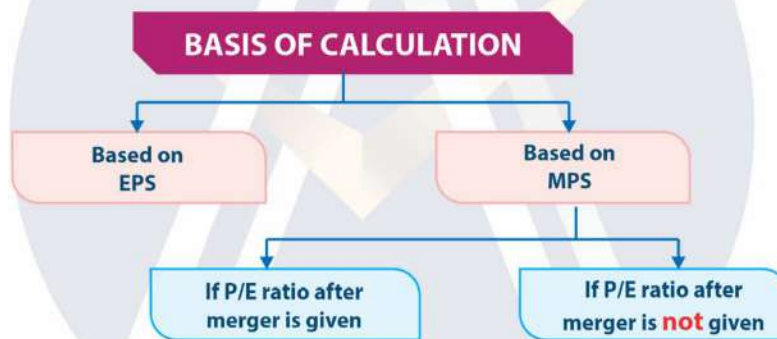
$$19.25 \Rightarrow \underline{\underline{12.26\% \text{ p.a.}}}$$

As Mr. X is having another opportunity to earn 14% & expected return on SLT's share is 12.26% only, it is advisable to offload in the market.

LOS 5 : Maximum Exchange Ratio and Minimum Exchange Ratio

A= Acquiring Company → will try to keep exchange ratio as low as possible. Hence, we calculate maximum ER for acquiring company.

B= Target Company → will try to keep exchange ratio as high as possible. Hence, we calculate minimum ER for Target Company.



Case 1: On the basis of EPS:

a) **Maximum Exchange ratio for A Ltd.**

EPS before Merger = EPS after Merger

$$EPS_A = EPS_{A+B}$$

$$EPS_A = \frac{E_A + E_B + \text{Synergy Gain}}{N_A + N_B \times \text{Exchange Ratio (ER)}}$$

Solve for ER

b) Minimum Exchange ratio for B Ltd.

EPS before Merger = Equivalent EPS after Merger

$$\begin{aligned} \text{EPS}_B &= \text{EPS}_{A+B} \times \text{ER} \\ \text{ESP}_B &= \left[\frac{E_A + E_B + \text{Synergy Gain}}{N_A + N_B \times \text{Exchange Ratio}} \right] \times \text{ER} \end{aligned}$$

Solve for ER

Case 2: On the basis of MPS (If P/E Ratio after merge is given i.e. $P/E_{(A+B)}$ is given)

a) Maximum Exchange ratio for A Ltd.

MPS before Merger = MPS after Merger

$$\begin{aligned} \text{MPS}_A &= \text{MPS}_{A+B} \\ \text{MPS}_A &= \text{EPS}_{A+B} \times P/E_{(A+B)} \\ \text{MPS}_A &= \left[\frac{E_A + E_B + \text{Synergy Gain}}{N_A + N_B \times \text{Exchange Ratio}} \right] \times P/E_{(A+B)} \end{aligned}$$

Solve for ER

b) Minimum Exchange ratio for B Ltd.

MPS before Merger = Equivalent MPS after Merger

$$\begin{aligned} \text{MPS}_B &= \text{MPS}_{A+B} \times \text{ER} \\ \text{MPS}_B &= [\text{EPS}_{A+B} \times P/E_{(A+B)}] \times \text{ER} \\ \text{MPS}_B &= \left[\frac{E_A + E_B + \text{Synergy Gain}}{N_A + N_B \times \text{Exchange Ratio}} \right] \times P/E_{(A+B)} \times \text{ER} \end{aligned}$$

Solve for ER

Case 3: On the basis of MPS (If P/E Ratio after merge is not given):

a) Maximum Exchange ratio for A Ltd.

MPS before merger = MPS after merger

$$\begin{aligned} \text{MPS}_A &= \text{MPS}_{A+B} \\ \text{MPS}_A &= \frac{MV_A + MV_B + \text{Synergy Gain}}{N_A + N_B \times \text{Exchange Ratio}} \end{aligned}$$

Solve for ER



b) Minimum Exchange ratio for B Ltd.

MPS before merger = Equivalent MPS after merger

$$MPS_B = MPS_{A+B} \times ER$$

$$MPS_B = \left[\frac{MV_A + MV_B + \text{Synergy Gain}}{N_A + N_B \times \text{Exchange Ratio}} \right] \times ER$$

Solve for ER

QUESTION NO. 4D

XYZ Ltd. wants to purchase ABC Ltd. by exchanging 0.7 of its share for each share of ABC Ltd. Relevant financial data are as follows :

Equity shares outstanding	1000000	400000
EPS (₹)	40	28
Market price per share (₹)	250	160

- Illustrate the impact of merger on EPS of both the companies.
- The management of ABC Ltd. has quoted a share exchange ratio of 1 : 1 for the merger. Assuming that P/E ratio of XYZ Ltd. will remain unchanged after the merger, what will be the gain from merger for ABC Ltd.?
- What will be the gain / loss to shareholders of XYZ Ltd.?
- Determine the maximum exchange ratio acceptable to shareholders of XYZ Ltd.

Solution:

Q.4D

(a) W.No-1 S/R = 0.70 : 1

EPS after Merger:-

$$\Rightarrow \frac{[10,00,000 \times 40] + [4,00,000 \times 28]}{10,00,000 + 4,00,000 \times 0.70}$$

EPS after Merger $\Rightarrow \frac{512,00,000}{12,80,000} \Rightarrow 40/\text{share}$

Impact:- G/L (Based on EPS) :-

	<u>XYZ</u>	<u>ABC</u>
EPS after Merger	40	40×0.70 $\Rightarrow 28$



EPS before Merger	40	28
G/L	0	0

(b) Since, Adjustment of P/E Ratio is given, we will follow MPS of the basis of calculation.

G/L (ABC Ltd.) → Target Co.
(Based on MPS)

MPS after Merger $\Rightarrow$ $EPS_{X12/ABC} \times P/E_{X12/ABC}$

$$\Rightarrow \frac{(102 \times 40) + (42 \times 28) + 0}{102 + 42 \times 1} \times \frac{28}{40}$$

$$\Rightarrow \frac{512,00,000}{14,00,000} \times 6.25$$

$$\boxed{MPS \text{ after Merger} \Rightarrow ₹ 228.57 / \text{Share}}$$

Cal. of G/L for ABC Ltd. (Based on MPS)

$$\text{Eg. MPS after Merger} = 228.57 \times 1$$

$$\text{(-) MPS before Merger} \Rightarrow 160.00$$

$$\text{Gain} \Rightarrow ₹ 68.57 / \text{Share}$$

(c) Cal. of G/L for X12 Ltd.
(Based on MPS)

$$\begin{aligned} \text{MPS after Merger} &= 228.57 \\ \text{MPS before Merger} &\Rightarrow 250.00 \end{aligned}$$

hols

$$₹ \frac{21.43}{\text{share}}$$

① Maximum E/R $\Rightarrow$ Avg. Co. X-12 Lk.
(Based on MPS) $\Rightarrow$ P/E Ratio
adj. is given

MPS before Merger = MPS after Merger

$$\text{MPS}_{XYZ} = \text{MPS}_{XYZ/ABC}$$

$$250 = \frac{\text{EPS}_{XYZ/ABC} \times \text{P/E}_{XYZ/ABC}}$$

$$\Rightarrow 250 \Rightarrow \frac{(102 \times 40) + (42 \times 28) + 0}{102 + 42} \times \frac{250}{40}$$

$$2500 \text{ Lakh} + 1000 \text{ Lakh} = 3200 \text{ Lakh}$$

$$1000 \text{ Lakh E/R} = 700 \text{ Lakh}$$

$$\text{E/R} = \frac{700 \text{ Lakh}}{1000 \text{ Lakh}}$$

$$\boxed{\text{E/R} = 0.70 \text{ : } 1}$$

QUESTION NO. 4E

C Ltd. & D Ltd. are contemplating a merger deal in which C Ltd. will acquire D Ltd. The relevant information about the firms are given as follows:

	C Ltd.	D Ltd.
Total Earnings (E) (in millions)	₹ 96	₹ 30
Number of outstanding shares (S) (in millions)	20	14
Earnings per share (EPS) (₹)	4.8	2.143
Price earnings ratio (P/E)	8	7
Market Price per share (P)(₹)	38.4	15

- What is the maximum exchange ratio acceptable to the shareholders of C Ltd., if the P/E ratio of the combined firm is 7?
- What is the minimum exchange ratio acceptable to the shareholders of D Ltd., if the P/E ratio of the combined firm is 9?

Solution:

(a) Maximum E/R $\rightarrow$ Acq. Co. (CLTA)
(Based on MRS)

MRS before Merger = MRS after Merger

$$MRS_{CLTA} = MRS_{C+D}$$

$$38.40 \Rightarrow EPS_{C+D} \times P/E_{C+D}$$

$$38.40 \Rightarrow \frac{E_C + E_D + S_4}{N_C + N_D \times E/R} \times 7$$

$$38.40 \Rightarrow \frac{96 + 30 + 0}{20 + 14 \times E/R} \times 7$$

$$768 + 537.6 E/R = 882$$

$$E/R = \frac{114}{537.60} \Rightarrow 0.2121\%$$

$$E/R = 0.2121\%$$

(b) Minimum E/R $\Rightarrow$ Target Co. DLTB
(Based on MRS)

MRS before Merger = Equivalent MRS after Merger

$$MRS_{DLTB} = MRS_{C+D} \times E/R$$

$$15 = EPS_{C+D} \times P/E_{C+D} \times E/R$$

$$\Rightarrow 15 \Rightarrow \frac{E_C + E_D + S_4}{N_C + N_D \times E/R} \times P/E_{C+D} \times E/R$$

$$\Rightarrow 15 \Rightarrow \frac{96 + 30 + 0}{20 + 14 \times \text{₹/₹}} \times 9 \times \text{₹/₹}$$

$$300 + 210 \text{ ₹/₹} \Rightarrow 1134 \text{ ₹/₹}$$

$$924 \text{ ₹/₹} = 300$$

$$\boxed{\text{₹/₹} = 0.325 \div 1}$$

LOS 6 : Calculation of % of Holding in New Company

$$\text{For A Ltd.} = \frac{\text{Total Number of shares of A Ltd.}}{\text{Total Number of share of A Ltd.} + \text{Total Number of Shares issued to B Ltd.}}$$

$$\text{For B Ltd.} = \frac{\text{Total Number of Shares issued to B Ltd}}{\text{Total Number of share of A Ltd.} + \text{Total Number of Shares issued to B Ltd.}}$$

LOS 7 : Free Float Market Capitalization (Value)

- ✚ **"Free Float"** means shares which are freely available or freely tradable in the market. Shares held by promoters are not freely tradable in the market. These shares are subject to certain restrictions as placed by SEBI.
- ✚ A Firm's market float is the total value of the shares that are actually available to the investing public and excludes the value of shares held by controlling shareholders because they are unlikely to sell their shares.
- ✚ Sensex and Nifty is based on Free-Float market Capitalization.

$$\text{Free Float Mkt Capitalization} = \text{Free float No. of equity shares} \times \text{MPS}$$

$$\left(\begin{array}{c} \text{Total No. of Equity Shares} \\ (-) \\ \text{Promoters Holding / Management Holding /} \\ \text{Govt. Holding / Strategic Holding} \end{array} \right) \times \text{MPS}$$

QUESTION NO. 5A

The following information relating to the acquiring Company A Ltd. and the target Company B Ltd. are available. Both the Companies are promoted by Multinational Company, Trident Ltd.

The promoter's holding is 50% and 60% respectively in A Ltd. and B Ltd.:

	A Ltd.	B Ltd.
Share Capital (₹)	200 Lakhs	100 Lakhs
Free Reserves and Surplus (₹)	800 Lakhs	500 Lakhs
Paid up Value per share (₹)	100	10
Free Float Market Capitalization (₹)	400 Lakhs	128 Lakhs
P/E Ratio (times)	10	4

Trident Ltd. is interested to do justice to the shareholders of both the Companies. For the swap ratio weights are assigned to different parameters by the Board of Directors as follows:

Book Value:	25%
EPS (Earning per share):	50%
Market Price:	25%

- What is the swap ratio based on above weights?
- What is the Book Value, EPS and expected Market price of A Ltd. after acquisition of B Ltd. (assuming P/E ratio of A Ltd. remains unchanged and all assets and liabilities of B Ltd. are taken over at book value).
- Calculate:
 - Promoter's revised holding in the A Ltd.
 - Free float market capitalization,
 - Also calculate No. of Shares, Earning per Share (EPS) and Book Value (B.V.), if after acquisition of B Ltd., A Ltd. decided to:
 - Issue Bonus shares in the ratio of 1:2; and
 - Split the stock (share) as ₹5 each fully paid

Solution:

Q.5A V.V. Imp. (Q-10 Marks)

<u>W.No.1</u>	<u>A Ltd.</u>	<u>B Ltd.</u>
Equity Share Capital	200 lacs.	100 lacs
÷ PAR VALUE	100	10
<u>No. of eq. Shares</u>	<u>2 lacs</u>	<u>10 lacs</u>

① Cal. of DVPS:-

	<u>A Ltd.</u>	<u>B Ltd.</u>
Eq. Share Capital	200 lacs	100 lacs
+ Reserve & Surplus	800 lacs	500 lacs
Book Value	1000 lacs	600 lacs
÷ No. of eq. Shares	2 lacs	10 lacs
<u>DVPS</u>	<u>500 / Share</u>	<u>60 / Share</u>

② Cal. of MPS :- Ans-1

	<u>Acta</u>	<u>Beta</u>
FF MKT. Capitalization	400 lacs	128 lacs
	→ 50%	→ 40%
÷ FF No. of eq. shares	2 lacs - 50%	10 lacs
		60%
	⇒ 1 lac	⇒ 4 lacs

MPS	<u>₹ 400 / Share</u>	<u>₹ 32 / Share</u>
-----	----------------------	---------------------

OR

Ans-2

	<u>Acta</u>	<u>Beta</u>
Total MKT. Capitalization	400	128
	50	40

⇒ 800 lacs 320 lacs

÷ Total No. of eq. shares	2 lacs	10 lacs
---------------------------	--------	---------

MPS	<u>400 / Share</u>	<u>32 / Share</u>
-----	--------------------	-------------------

③ Cal. of EPS :-

	<u>Acta</u>	<u>Beta</u>
P/E Ratio = $\frac{MPS}{EPS}$	10 times	4 times
MPS	400 / Share	32 / Share

EPS = $\frac{MPS}{P/E \text{ Ratio}}$	$\frac{400}{10}$	$\frac{32}{4}$
---------------------------------------	------------------	----------------

⇒ 40 / Share 8 / Share

(a) Cal. of Swap Ratio:- $\Rightarrow$ Target Co.
Acq. Co.

$$\textcircled{1} \text{ BVPS} \Rightarrow \frac{60}{500} \Rightarrow 0.12 \times 25 \Rightarrow 0.03$$

$$\textcircled{2} \text{ MPS} \Rightarrow \frac{32}{400} \Rightarrow 0.08 \times 25 \Rightarrow 0.02$$

$$\textcircled{3} \text{ EPS} \Rightarrow \frac{8}{40} \Rightarrow 0.20 \times 50 \Rightarrow 0.10$$

$$S/R \Rightarrow \frac{0.15}{1}$$

(b) (i) Cal. of BVPS after Merger:-

$$\text{BVPS}_{A+B} = ?$$

Equity Share Capital

350 lacs

$$[2 \text{ lacs} + 10 \text{ lacs} \times 0.15]$$

$\times$

100 (F.V. Value of Share)

$$[22 + 1.5] \times 100$$

Reserves & Surplus

₹ 1250 l.

$$[800 + 500 - 50]$$

Dr. Value

1600 lacs

$\div$ No. of eq. shares

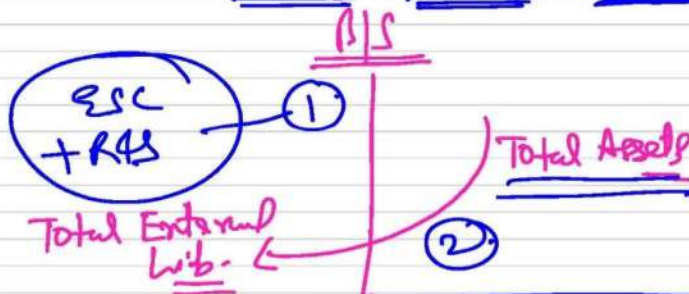
3.5 lacs

BVPS_{A+B}

$$\frac{₹ 457.14}{\text{Share}}$$



<u>W.No. Party</u>	<u>A Ltd.</u>	<u>B Ltd.</u>	<u>Combined</u>
<u>ESC</u>	200 l.	100 l.	300 l. (10)
<u>RB</u>	800 l.	500 l.	800 + 500 = 1300
	<u>1000 l</u>	<u>600 l</u>	<u>1600 l (4)</u>



Net Worth will remain same.

(ii) EPS after Merger:- (EPS_{A+B})

$$\text{EPS}_{A+B} = \frac{\text{E}_A + \text{E}_B + S_4}{N_A + N_B \times \text{EJR}}$$

$$\Rightarrow \frac{(20 \times 40) + (100 \times 8) + 0}{20 + 100 \times 0.15}$$

$$\Rightarrow \frac{1600}{35}$$

$$\text{EPS}_{A+B} \Rightarrow \frac{1600}{35} \Rightarrow ₹ 45.714/\text{Share}$$

(iii) MPS after Merger:-

$$\text{MPS}_{A+B} \Rightarrow \text{EPS}_{A+B} \times 1/\text{EAPR}$$

$$\Rightarrow 45.714 \times 10$$

$$\text{MPS}_{A+B} \Rightarrow ₹ 457.14/\text{Share}$$



(c) (i) Promoter's Revised Holding in A Ltd.:-

Total No. of eq. Shares after Merger:-

$$\Rightarrow 22 + 10 \times 0.15$$

$$\Rightarrow \underline{\underline{3.5 \text{ lakhs shares}}}$$

Promoter's Holding:- in A Ltd. after Merger

A Ltd.

50%

$$22 \times 50\%$$

$$\Rightarrow \underline{\underline{1 \text{ lakh share}}}$$

B Ltd.

60%

$$[10 \times 0.15] \times 60\%$$

$$1.5 \text{ lakhs} \times 60\% \\ \Rightarrow \underline{\underline{0.90 \text{ lakhs}}}$$

Total No. of Shares held by promoter's after Merger:-

$$\Rightarrow 1 \text{ lakh} + 0.90 \text{ lakh} \Rightarrow \underline{\underline{1.90 \text{ lakhs}}}$$

% of Holding in Merged Entity:-

$$\Rightarrow \frac{1.90 \text{ lakhs}}{3.50 \text{ lakhs}} \times 100 \Rightarrow \underline{\underline{54.286\%}}$$

(ii) Free-float Mkt. Capitalization:

$\left[\begin{array}{c} \text{Total No. of Shares} \\ \text{Promoter's Holdings} \end{array} \right] \times \text{MPS after Merger}$

$$\Rightarrow [3.5 \text{ lakhs} - 1.90 \text{ lakhs}] \times 457.14/\text{Share}$$

$$\Rightarrow ₹ 731.424 \text{ Lakhs}$$

(iii) af

$$\text{Bonus} = \frac{1}{2} \times 2 \times 1.75 \text{ Lakhs} \times 100$$

$$\underline{3.5 \text{ Lakhs}} + \frac{3.5 \text{ Lakhs}}{2} \Rightarrow 5,25,000 \text{ Shares}$$

Split

$$100 \rightarrow 5$$

$$\Rightarrow \underline{20:1}$$

(i) Total No. of eq. shares after Bonus & Split

$$\Rightarrow 5,25,000 \times 20 \Rightarrow 10,50,000 \text{ Shares}$$

(ii) EPS after Bonus & Splits

$$\Rightarrow \frac{(22 \times 40) + (102 \times 8)}{105 \text{ Lakhs}}$$

$$\Rightarrow \frac{1602}{105} \Rightarrow \underline{1.524/\text{Share}}$$

(iii) DVs after Bonus & Splits

Equity Share Capital 525 Lakhs

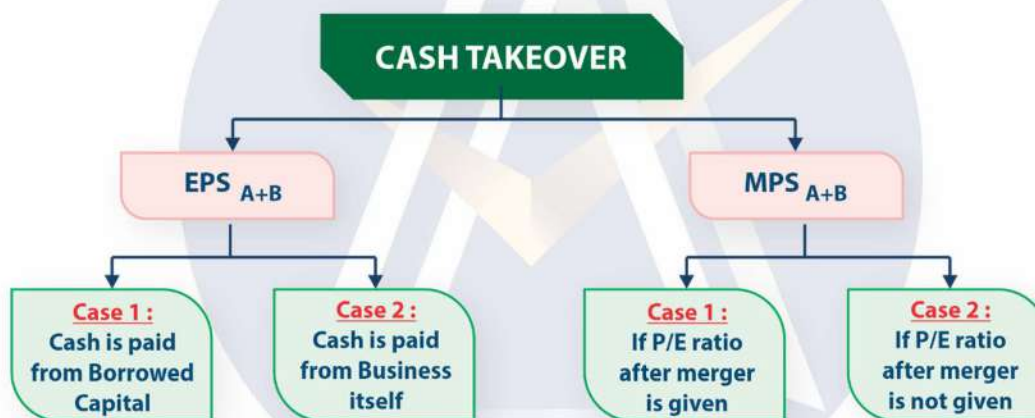
$$\left[105 \text{ Lakhs} \times 5/\text{Share} \right] \text{ (Fair Value)}$$

Reserves & Surplus 1075 Lakhs

$$\left[800 + 500 - 50 \right]$$

$$\begin{aligned}
 &= 1250 \text{ l} - \left[\frac{3.5 \text{ l}}{2} \right] \times 100 \\
 &\quad \text{Bonus share} \quad \text{M.A.R. Value} \\
 &= 1250 \text{ l} - 175 \text{ l} \\
 &\quad \text{Book Value} \quad \quad \quad 1600 \text{ l} \\
 &\div \text{No. of eq. share} \quad \quad \quad 105 \text{ l} \\
 &\text{BVPS after Bonus \& split} \quad \quad \quad \underline{\underline{\text{₹ 15.24/Share}}}
 \end{aligned}$$

LOS 8 : Calculation of EPS_{A+B} and MPS_{A+B} in case of CASH TAKEOVER



1. EPS_{A+B} in case of cash take-over & cash is paid out of borrowed money

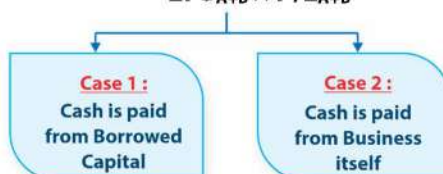
$$EPS_{A+B} = \frac{E_A + E_B + \text{Synergy Gain} - \text{Interest} (1 - \text{tax})}{N_A}$$

2. EPS_{A+B} in case of cash take-over & money is arranged from Business itself

$$EPS_{A+B} = \frac{E_A + E_B + \text{Synergy Gain} - \text{Cash Paid} \times \text{Opportunity cost of interest}}{N_A}$$

3. MPS_{A+B} (If P/E ratio after merger is given)

$$= EPS_{A+B} \times P/E_{A+B}$$





4. MPS_{A+B} (If P/E ratio after merger is NOT given)

$$MPS_{A+B} = \left[\frac{MV_A + MV_B + \text{Synergy Gain} - \text{Cash Paid}}{N_A} \right]$$

QUESTION NO. 6A

The chief executive of a company thinks that shareholders always look for the earnings per share. Therefore, he considers maximization of the earnings per share as his company's objective. His company's current net profits are ₹ 80 lakh and EPS is ₹ 4. The current market price is ₹ 42. He wants to buy another firm which has current income of ₹ 15.75 lacs, EPS of ₹ 10.50 and the market price per share of ₹ 85.

- What is the maximum exchange ratio which the chief executive should offer so that he could keep EPS at the current level?
- If the chief executive borrows funds at 15% rate of interest and buys out another company by paying cash, how much should he offer to maintain his EPS? Assume Tax Rate to be 52%.

Solution:

Q. 6A (a)

<u>W.No.1</u>	<u>Acq. Co.</u>	<u>Target Co.</u>
PAT	80 lakhs	15.75 lakhs
EPS	4/lks	10.50/lks
No. of Shares	20 lakhs	1.5 lakhs
MPS	42/lks	85/lks

(a) Max. ex/r (Based on EPS) :-

EPS before Merger = EPS after Merger

$$EPS_{Acq.} = EPS_{Acq.} + Target$$

$$4 \Rightarrow \underline{80l + 15.75l + 0}$$


$$20\text{L} + 1.5\text{L} \times \text{E/R}$$

$$80\text{L} + 6\text{Lakh} \times \text{E/R} = 95.75\text{L}$$

$$\text{E/R} \Rightarrow \frac{15.75\text{L}}{6\text{L}} \Rightarrow \underline{\underline{2.625\%}}$$

$$\boxed{\text{Max. S/R} \Rightarrow 2.625\%}$$

⑤ Maximum Cash paid per share:-

$$\boxed{\text{EPS before Merger} = \text{EPS after Merger}}$$

$$\text{EPS}_{\text{Acq.}} = \text{EPS}_{\text{Acq.} + \text{Target}}$$

$$Y \Rightarrow \frac{\text{E}_{\text{Acq.}} + \text{E}_{\text{Target}} + \text{S4} - \frac{\text{Intt. Cost}}{(1-\text{tax})}}{\text{N}_{\text{Acq.}}}$$

$$Y \Rightarrow 80\text{Lakh} + 15.75\text{Lakh} + 0 - \frac{[2\% \times 15\%](1-52\%)}$$

$$\underline{\underline{20\text{Lakh}}}$$

$$80\text{Lakh} \Rightarrow 95.75\text{L} - 0.15\% \times 0.48$$

$$0.072\% \Rightarrow 15.75\text{L}$$

$$\boxed{X \Rightarrow ₹ 218.75\text{Lakh}}$$

$$\text{Cash paid/share} \Rightarrow \frac{218.75\text{Lakh}}{1.5\text{Lakh}}$$

$$\boxed{\text{Max. Cash paid/share} \Rightarrow 145.83\text{Lakh}}$$

$\Rightarrow$ Acquiring Co. should offer ₹145.83 per share to maintain his EPS.

QUESTION NO. 6B

A Ltd. wanted to acquire B Ltd. The shares issued by the two companies are 10,00,000 and 5,00,000 respectively:

- (i) Calculate the increase in the total value of B Ltd. resulting from the acquisition on the basis of the following conditions:

Current Expected Growth Rate of B Ltd.	7%
Expected Growth Rate under control of A Ltd. (without any additional capital investment & without any change in risk of operations)	8%
Current Market Price Per Share of A Ltd.	₹100
Current Market Price Per Share of B Ltd.	₹20
Expected Dividend Price Per Share of B Ltd.	₹0.60

- (ii) On the basis of aforesaid conditions calculate the gain or loss to shareholders of both the companies, if A Ltd. was to offer one of its shares for every four shares of B Ltd.
- (iii) Calculate the gain to the shareholders of both the companies, if A Ltd. pays ₹22 for each share of B Ltd. assuming the P/E Ratio of A Ltd. does not change after the merger. EPS of A Ltd. is ₹8 and that of B is ₹2.50. It is assumed that A Ltd. invests its cash to earn 10%.

Solution:

Q 6B (3 times)
(8-10 Marks)

(a) W.No 1 Cal. of K_e = ? (Discount rate)

Gordon's Model:-

$$P_0 = \frac{D_1}{K_e - g}$$

$$20 = \frac{0.60}{K_e - 0.07}$$

$$\underline{\underline{K_e = 0.10 \text{ or } 10\%}}$$

K_e before & after remains same.

$$\text{Revised } b_0 \Rightarrow \frac{D_1}{K_e - j_c}$$

$$\Rightarrow \frac{0.60}{.10 - .08} \Rightarrow \underline{\underline{\text{₹} 30/\text{Share}}}$$

Increase in the Value of Delta:-

$$[\text{₹} 30 - \text{₹} 20] \times 50,000$$

$$\Rightarrow \underline{\underline{\text{₹} 50,00,000}} \rightarrow \text{₹} 54$$

(b) Gain/Loss (Based on MPS):-

W.No.1 Cal. MPS after Merger:-

$$\text{MPS}_{A+B} \Rightarrow \frac{\text{MVA} + \text{MVB} + S_4}{N_A + N_B \times \frac{2}{3}}$$

$$\Rightarrow \frac{[102 \times 100] + [52 \times 20] + 50,00,000}{10,00,000 + 50,000 \times 0.25}$$

$$\text{MPS}_{A+B} \Rightarrow \frac{11502}{11.252} \Rightarrow \underline{\underline{102.22/\text{Share}}}$$

Gain/Loss (Based on MPS):-

	<u>Delta</u>	<u>Delta</u>
MPS after Merger	102.22	$102.22 \times .25$ $\Rightarrow 25.555$
MPS before Merger.	100	20

	<u>Gain</u>	<u>2.22/sh</u>	<u>5.55/sh</u>
Q) W-No: 2	<u>Actd.</u>	<u>Bltd.</u>	
EPS	8/share	2.50/sh	
MPS	100/sh	20/sh	
P/E Ratio = $\frac{MPS}{EPS}$	12.5 times	8 times	

$$MPS_{A+B} \Rightarrow EPS_{A+B} \times P/E_{A+B}$$

$$\Rightarrow \frac{E_A + E_B + SC - \text{Gain paid} \times K_0}{N_A} \times \frac{P}{E}_{Bto}$$

$$MPS_{A+B} \Rightarrow [102 \times 8] + [52 \times 2.5] + 0$$

$$(-) [500,000 \times 22/sh] \times 10\%$$

$$10,00,000$$

$$\Rightarrow \frac{802 + 12.52 - 11,00,000}{10,00,000} \times 12.5 \text{ times}$$

$$\Rightarrow MPS_{A+B} \Rightarrow 8.15 \times 12.5 \text{ times}$$

$$\Rightarrow \underline{\underline{101.875/share}}$$

Cal. Gain/Loss (Based on MPS) :-

	<u>Actd.</u>	<u>Bltd.</u>
MPS after merger	101.875	22 ²⁰
MPS before merger	100	20
Gain	<u>1.875/sh</u>	<u>2/share</u>

LOS 10 : Purchase Consideration / Cost of Acquisition

✚ PC = Net Payment made by Acquiring Co. to Target Co.

Calculation of PC/ COA	
Market Value of Equity Shares Issued by A Ltd. to B Ltd.	XXX
(+) Debentures, Preference shares Capital Issued by A Ltd. to B Ltd.	XXX
(+) Current Liability paid or Taken over	XXX
(+) Any other expenses incurred	XXX
(-) Cash in hand or Bank	XXX
(-) Sale of any other asset not required in business	XXX
Cost of Acquisition / Purchase Consideration	XXX

Note:

- ✚ Cash and current Liabilities must be taken, even if question is Silent.
- ✚ Sale of any other asset not required should be taken only if clear indication in the Question.

QUESTION NO. 8B

M/s Tiger Ltd. wants to acquire M/s Leopard Ltd. The balance sheet of Leopard Ltd. as on 31st March, 2012 is as follows:

Liabilities	₹	Assets	₹
Equity Capital (70000 Shares)	7,00,000	Cash	50,000
Retained Earnings	3,00,000	Debtors	70,000
12% Debentures	3,00,000	Inventories	2,00,000
Creditors and Other liabilities	3,20,000	Plant & Equipment	13,00,000
	16,20,000		16,20,000

Additional Information:

- Shareholders of Leopard Ltd will get one share in Tiger Ltd. for every two shares. External liabilities are expected to be settled at ₹ 5,00,000. Shares of Tiger Ltd would be issued at its current price of ₹ 15 per share. Debentures will get 13% convertible debentures in the purchasing Company for the same amount. Debtors and inventories are expected to realize ₹ 2,00,000.
- Tiger Ltd. has decided to operate the business of Leopard Ltd. as a separate division. The division is likely to give cash flows (after tax) to the extent of ₹5,00,000 per year for 6 years. Tiger Ltd has planned that after 6 years, this division would be demerged and disposed of for ₹ 2, 00,000.
- The Company's cost of capital is 16 %

Make a report to the Board of the Company advising them about the financial feasibility of this acquisition.

Net Present Values for 16 % for Re. 1 are as follows:

Years	1	2	3	4	5	6
PV	0.862	0.743	0.641	0.552	0.476	0.410

Solution:

0.8B

1) Calculation of Purchase Consideration Cost of Acquisition:-

MV of Equity Shares issued
by Tiger Ltd to Leopard Ltd. ₹ 25,000

$$\left[\frac{70,000}{2} \right] \times 15$$

⇒ 13% Convertible Debentures 3,00,000
issued by Tiger Ltd to Leopard
Ltd.

⇒ External Liabilities ₹ 00,000

13,25,000

less: Cash & Bank 50,000

less:- Realization of Debtors 2,00,000

& Inventories

PC/COA

₹ 10,75,000

Calculation of NPV:-

$$NPV = PV \text{ of CI's} - PV \text{ of CO's} \left| \begin{array}{l} \text{Interest} \\ \text{Interest} \end{array} \right.$$

$$\Rightarrow 5,00,000 [PVAF @ 16\%, 6 \text{ years}]$$

+

$$2,00,000 [PVF @ 16\%, 6^{\text{th}} \text{ year}]$$

↪

10,75,000

$$\Rightarrow 5,00,000 [3.684] + 2,00,000 \times .410$$

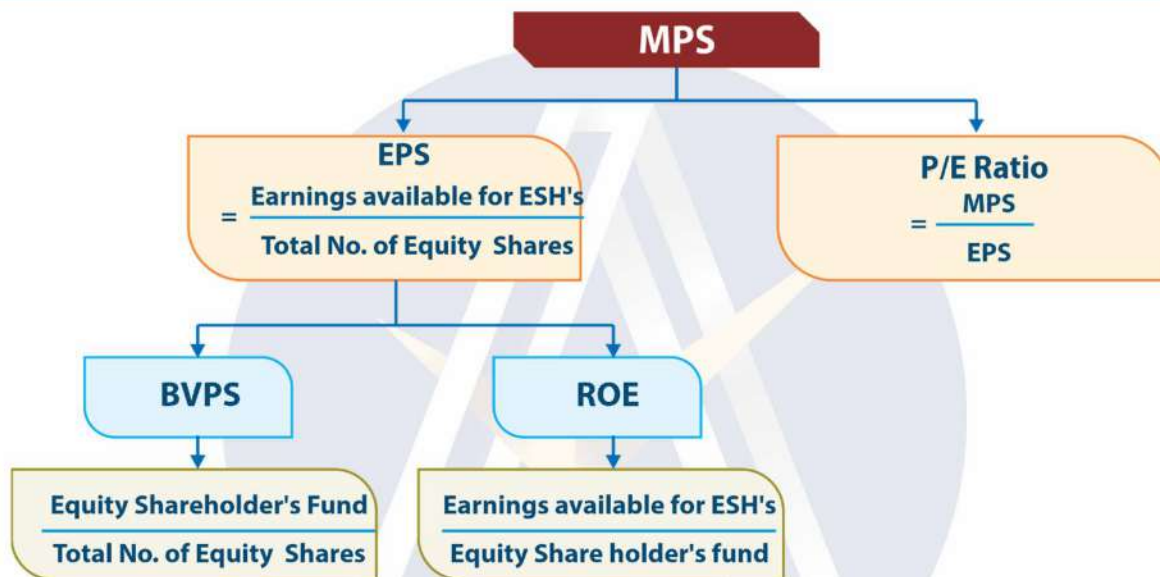
$$- 10,75,000$$

$$\Rightarrow NPV \Rightarrow ₹ 849,000$$

Decision:

The merger is financially viable since NPV is positive, it is advisable to takeover leopard Ltd

LOS 13 : Components of MPS



QUESTION NO. 11A

Following are the financial statement for A Ltd. and B Ltd. for the current financial year. Both the company operate in the same industry:

Balance Sheet

Particulars	A Ltd.	B Ltd.
Total Current Assets	14,00,000	10,00,000
Total Fixed Assets (net)	10,00,000	5,00,000
Total	24,00,000	15,00,000
Equity Capital (of ₹ 10 each)	10,00,000	8,00,000
Retained Earnings	2,00,000	—
4% Long-term Debt	5,00,000	3,00,000
Total Current Liabilities	7,00,000	4,00,000
Total	24,00,000	15,00,000

INCOME STATEMENT

Net sales	34,50,000	17,00,000
Less : Cost of Goods Sold	27,60,000	13,60,000
Gross Profit	6,90,000	3,40,000

Operating Expenses	2,00,000	1,00,000
Interest	70,000	42,000
Earnings Before Taxes	4,20,000	1,98,000
Taxes (50%)	2,10,000	99,000
Earnings after taxes (EAT)	2,10,000	99,000
Additional Information:		
Number of Equity Shares	100000	80000
Dividend Payment Ratio (D/P)	40%	60%
Market Price Per Share (MPS)	₹ 40	₹ 15

Assume that the two firms are in the process of negotiating a merger through an exchange of equity shares. You have been asked to assist in establishing equitable exchange terms, and are required to-

- Decompose share prices of both companies into EPS & P/E components, & also segregate their EPS figures into return on equity (ROE) & book value/intrinsic value per share (BVPS) components.
- Estimate future EPS growth rates for each firm.
- Based on expected operating synergies A Ltd. estimates that the intrinsic value of B's equity share would be ₹ 20 per share on its acquisition. Assume A Ltd. Intrinsic Value to be equal to its Market Price. You are required to develop a range of justifiable equity share exchange ratio based on Intrinsic Value and MPS that can be offered by A Ltd. to B Ltd's shareholders. Based on your analysis in parts (i) and (ii) would you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits? Why?
- Calculate the post-merger EPS based on an exchange ratio of 0.4:1 being offered by A Ltd. Indicate the immediate EPS accretion or dilution, if any, that will occur for each group of shareholders.
- Based on a 0.4:1 exchange ratio, and assuming that A's pre-merger P/E ratio will continue after the merger estimate the post-merger market price. Show the resulting accretion or dilution in pre-merger market price.

Solution:

(i)

Q.11A (10 marks)

A Ltd.

MPS $\Rightarrow$ ₹ 40/sh

↓

EPS $\Rightarrow \frac{2,10,000}{1,00,000} = 2.10/\text{sh}$ ↓ ROE $\Rightarrow \frac{\text{EFE}}{\text{ESH's fund}} \times 100$ $\Rightarrow \frac{2,10,000}{10,00,000 + 2,00,000} \times 100$ $\Rightarrow 17.5\%$	P/E Ratio $\Rightarrow \frac{\text{MPS}}{\text{EPS}}$ $\Rightarrow \frac{40}{2.10}$ $\Rightarrow 19.05 \text{ times}$ BVPS $\Rightarrow \frac{\text{ESH's fund}}{\text{No. of eq. shares}}$ $\Rightarrow \frac{10,00,000 + 2,00,000}{1,00,000}$ $\Rightarrow 12/\text{share}$
---	---

BLT

$MPS = 15/\text{Share}$

↓

$EPS \Rightarrow \frac{99,000}{80,000}$ $\Rightarrow 1.2375/\text{Share}$ ↓ $BVPS \Rightarrow \frac{8,00,000}{80,000}$ $\Rightarrow 10/\text{Share}$	$P/E \text{ Ratio} \Rightarrow \frac{15}{1.2375}$ $\Rightarrow 12.12 \text{ times}$ ↓ $ROE \Rightarrow \frac{99,000}{8,00,000} \times 100$ $\Rightarrow 12.375\%$
---	--

(ii) $g = RR \times ROE$

Actl.

$$g = 60\% \times 17.5\%$$

$$g \Rightarrow 10.5\%$$

BLT.

$$40\% \times 12.375\%$$

$$g \Rightarrow 4.95\%$$

(iii) Range $\rightarrow$ Highest Range & Lowest Range

↓ ↓

Upper Lower

ER $\rightarrow$ Based on IV:-

$$\checkmark \Rightarrow \frac{\text{IV of BLT.}}{\text{IV of Actl.}} \Rightarrow \frac{20}{40}$$

$$\Rightarrow 0.50\%$$



$$\text{E/R} \rightarrow \text{Based on MPS} -$$

$$= \frac{\text{MPS of Bkt.}}{\text{MPS of Acta}} = \frac{15}{40}$$

$$\Rightarrow 0.375 \%$$

Range of S/R
 (lowest to highest) $\Rightarrow 0.375$ to 0.50

$\downarrow$ $\downarrow$
lower upper

	<u>Acta</u>	<u>Bkt.</u>
MPS	40/sh.	15/sh.
EPS	2.10/sh.	1.2375/sh.
P/E Ratio	19.05 times	12.12 times
BVPS	12/sh.	10/sh.
ROE	17.5%	12.375%
g	10.5%	4.95%

Decision: When Bkt. is compared against Acta. from various angles, we find that the comparative position of Bkt. is very poor.

Hence, Shareholder's of Acta. will offer to Bkt., the lowest range i.e. 0.375%

$$(iv) \quad S/R = 0.40 \checkmark$$

$$EPS_{A+B} \Rightarrow \frac{E_A + E_B + S_4}{N_A + N_B \times S/R}$$

$$\Rightarrow \frac{2,10,000 + 99,000 + 0}{1,00,000 + 80,000 \times 0.4}$$

$$EPS_{A+B} \Rightarrow 2.341 / \text{Share}$$

Cal. of G/L (Based on EPS) :-

	<u>Auto.</u>	<u>Diff.</u>
EPS after Merger	2.341	2.341×40
		$\Rightarrow 0.9364$
EPS before Merger	2.10	1.2325
Gain	<u>0.241</u>	<u>Loss</u> $\Rightarrow 0.3011$

$$(v) \quad S/R = 0.48 \checkmark$$

$$MPS_{A+B} \Rightarrow EPS_{A+B} \times P/E_{A+B}$$

$$\Rightarrow 2.341 \times 19.05 \text{ times}$$

$$\Rightarrow ₹ 44.60 / \text{Share}$$

Gain/Loss (Based on MPS) :-

	<u>Auto.</u>	<u>Diff.</u>
MPS after Merger	44.60	44.60×40
		$\Rightarrow 17.84$
MPS before Merger	40	15
Gain	<u>4.60</u>	<u>Gain</u> $= 2.84$



LOS 14 : Maximum MPS & Minimum MPS

$$\text{Minimum MPS offered by A Ltd. To B Ltd.} = \frac{\text{Value of Equity of B Ltd.}}{\text{No. of Equity Shares of B Ltd.}}$$

$$\text{Maximum MPS offered by A Ltd. To B Ltd.} = \frac{\text{Value of Equity of B Ltd.} + \text{Value of Synergy}}{\text{No. of Equity Shares of B Ltd.}}$$

QUESTION NO. 12B

The equity shares of XYZ Ltd. are currently being traded at ₹ 24 per share in the market. XYZ Ltd. has total 10,00,000 equity shares outstanding in number; and promoters' equity holding in the company is 40%.

PQR Ltd. wishes to acquire XYZ Ltd. because of likely synergies. The estimated present value of these synergies is ₹ 80,00,000.

Further PQR feels that management of XYZ Ltd. has been over paid. With better motivation, lower salaries and fewer perks for the top management, will lead to savings of ₹ 4,00,000 p.a. Top management with their families are promoters of XYZ Ltd. Present value of these savings would add ₹ 30,00,000 in value to the acquisition.

Following additional information is available regarding PQR Ltd.:

Earnings per share:	₹ 4
Total number of equity shares outstanding:	15,00,000
Market price of equity share:	₹ 40

Required:

- What is the maximum price per equity share which PQR Ltd. can offer to pay for XYZ Ltd.?
- What is the minimum price per equity share at which the management of XYZ Ltd. will be willing to offer their controlling interest?

Solution:

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Q.12B
(i) Maximum price per equity share
which PQR Ltd. can offer to XYZ Ltd.:-

$$\Rightarrow \frac{\text{Value of Eq. of XYZ Ltd.} + \text{Value of synergies}}{\text{No. of eq. shares of XYZ Ltd.}}$$

$$\Rightarrow \frac{[10,00,000 \times 24] + 80,00,000 + 30,00,000}{10,00,000}$$

$$\Rightarrow \frac{350,00,000}{10,00,000} = \underline{\underline{₹ 35/\text{Share}}}$$

(ii) Minimum price per equity share at
which the management of XYZ Ltd.

will be willing to offer their controlling
interest:-

Value of Equity of Management
Holdings of XYZ Ltd. 96,00,000

$$[10,00,000 \times 40\%] \times 24$$

(+) Savings (PV) due to lesser 30,00,000
salaries & perks of top
management

$$\begin{array}{r} 126,00,000 \\ \div \text{No. of eq. shares} \quad 4,00,000 \end{array}$$

$$\underline{\underline{₹ 31.50/\text{Share}}}$$

QUESTION NO. 12D

R Ltd. and S Ltd. operating in same industry are not experiencing any rapid growth but providing a steady stream of earnings. R Ltd.'s management is interested in acquisition of S Ltd. due to its excess plant capacity. Share of S Ltd. is trading in market at ₹ 3.20 each. Other data relating to S Ltd. is as follows:

Balance Sheet of S Ltd.

Liabilities	Amount (₹)	Assets	Amount (₹)
Current Liabilities	1,59,80,000	Current Assets	2,48,75,000
Long Term Liabilities	1,28,00,000	Other Assets	94,00,000
Reserve & Surplus	2,79,95,000	Property Plants & Equipment	3,45,00,000
Share Capital (80 Lakhs shares of ₹ 1.5 each)	1,20,00,000		
Total	6,87,75,000	Total	6,87,75,000

Particulars	R Ltd. (₹)	S Ltd. (₹)	Combined Entity (₹)
Profit after Tax	86,50,000	49,72,000	1,21,85,000
Residual Net Cash Flows per year	90,10,000	54,87,000	1,85,00,000
Required return on equity	13.75%	13.05%	12.5%

You are required to compute the following:

- Minimum price per share S Ltd. should accept from R Ltd.
- Maximum price per share R Ltd. shall be willing to offer to S Ltd.
- Floor Value of per share of S Ltd., whether it shall play any role in decision for its acquisition by R Ltd.

Solution:

Q.12D

i) Cal. of Minimum Price per Share S Ltd. should accept from R Ltd.:-

$$\Rightarrow \frac{\text{Value of Equity of S Ltd.}}{\text{No. of Eq. Shares of S Ltd.}}$$

$$\Rightarrow \frac{420,45,977}{80,00,000}$$

$$\Rightarrow \underline{5.26/\text{Share}}$$

W.No.1 Value of Equity of S Ltd.:-

$$\Rightarrow \frac{54,87,000}{0.1305} \text{ --- } 6$$

$$\Rightarrow \underline{₹ 420,45,977} \checkmark$$

Therefore, the minimum price per share S Ltd. should accept from R Ltd. is ₹ 5.26/share.

(ii) Cal. of Maximum Price per share R Ltd. shall be willing to offer to S Ltd.:-

$$\Rightarrow \frac{\text{Value of Equity of S Ltd.} + \text{Value of Synergy}}{\text{No. of Eq. Shares of S Ltd.}}$$

$$\Rightarrow \frac{420,45,977 + 404,26,750}{80,00,000}$$

$$\Rightarrow \frac{₹ 824,72,727}{₹ 80,00,000} = ₹ 10.31/\text{Share}$$

W.No:- Value of Synergy:-

$$\Rightarrow \text{Value of Combined Entity} - [V_{R \text{ Ltd.}} + V_{S \text{ Ltd.}}]$$

$$\Rightarrow 1480,00,000 - [655,27,273 + 420,45,977]$$

$$\Rightarrow \boxed{404,26,750} \rightarrow \text{Value of Synergy}$$

Value of Combined Entity

$$\Rightarrow \frac{185,00,000}{.125} \dots \text{X}$$

$$\Rightarrow \underline{1480,00,000} \checkmark$$

Value of Equity of R Ltd.:-

$$\Rightarrow \frac{990,000}{.1375} \dots \text{X}$$

$$\Rightarrow \text{₹ } \underline{\underline{655,27,273}}$$

(iii) Flow Value
 $\Downarrow$
Minimum Value

[MPS, DVPS + Valuation] Minimum
 $\Downarrow$
Flow Value

[3.20/share, 5/share + 5.20/share]
Minimum

$\Rightarrow$ Flow Value $\therefore \rightarrow$ 3.20/share

W.No:- DVPS:-

ESC	120,00,000
+ R&B	279,95,000

Book Value	<u>399,95,000</u>
------------	-------------------

$\div$ No. of Shares	80,00,000
----------------------	-----------

DVPS $\rightarrow$ 5/share

Decision: Flow Value per share of SLT. shall be ₹ 3.20/share & it shall not play any role in decision for the acquisition of SLT. as it is lower than its Book Value & Valuation as per DCF Approach

LOS 15 : Valuation + Merger
QUESTION NO. 13B

ICL is proposing to take over SVL with an objective to diversify. ICL's profit after tax (PAT) has grown @ 18 per cent per annum and SVL's PAT is grown @ 15 per cent per annum. Both the companies pay dividend regularly. The summarised Profit & Loss Account of both the companies are as follows:

₹ in Crores

Particulars	ICL	SVL
Net Sales	4,545	1,500
PBIT	2,980	720
Interest	750	25
Provision for Tax	1,440	445
PAT	790	250
Dividends	235	125

	ICL		SVL	
Fixed Assets				
Land & Building (Net)	720		190	
Plant & Machinery (Net)	900		350	
Furniture & Fixtures (Net)	30	1,650	10	550
Current Assets		775		580
Less: Current Liabilities				
Creditors	230		130	
Overdrafts	35		10	
Provision for Tax	145		50	
Provision for dividends	60	470	50	240
Net Assets		1,955		890
Paid up Share Capital (₹ 10 per share)	250		125	
Reserves and Surplus	1,050	1,300	660	785
Borrowing		655		105
Capital Employed		1,955		890
Market Price Share (₹)	52	75		

ICL's Land & Buildings are stated at current prices. SVL's Land & Buildings are revalued three years ago. There has been an increase of 30 per cent per year in the value of Land & Buildings.

SVL is expected to grow @ 18 per cent each year, after merger.

ICL's Management wants to determine the premium on the shares over the current market price which can be paid on the acquisition of SVL. You are required to determine the premium using:

- Net Worth adjusted for the current value of Land & Buildings plus the estimated average profit after tax (PAT) for the next five years.
- The dividend growth formula.
- ICL will push forward which method during the course of negotiations?

Period (t)	1	2	3	4	5
FVIF (30%, t)	1.300	1.690	2.197	2.856	3.713
FVIF (15%, t)	1.15	2.4725	3.9938	5.7424	7.7537

Solution:

Q.13B V. Imp. (10 marks)

(i) Method 1:-

[Net Worth + Avg. of 5 year profits]

Cal. of Net Worth of SVL :-

[Total Assets - Total Ext. liab.
₹ cr.]

Land & Building.

⇒ 417.43

[190 × 2.197
FVIF for 3 years
@ 20%]

+ Plant & Machinery 350.00

+ Furniture & fixtures 10.00

+ Current Assets 580.00

(-) Current liabilities 240.00

(-) Borrowings 105.00

Net Worth → 1012.43

+ Average Profit of 5 years → 387.69

[250 cr. × 7.7537]

5

Total value of firm 1400.12

Total Current Mkt. Value 937.50
[75/shr × 12.5 cr.]

Premium

462.62 cr.

% Premium ⇒ 462.62 × 100

$$\begin{aligned} &937.50 \\ \rightarrow &\underline{\underline{49.35\%}} \end{aligned}$$

(ii) Method 2:- Dividend growth model:-

$$P_0 = \frac{D_0(1+g)}{K_e - g_c}$$

$$DPS = \frac{125 \text{ cr.}}{12.5 \text{ cr.}} \Rightarrow 10/\text{Share}$$

$$MPS = 75/\text{Share}$$

$$\text{Existing 'g' } \Rightarrow 15\% \checkmark$$

$$\text{New growth rate (after Merger)} = 18\% \checkmark$$

Cal. of $K_e = ?$

$$75 = \frac{10(1+0.15)}{K_e - 0.15}$$

$$K_e = \frac{10(1+0.15)}{75} + 0.15$$

$$\Rightarrow 0.3033 \text{ or } 30.33\%$$

Revised P_0 (after Merger) :-

$$P_0 = \frac{10(1+0.18)}{0.3033 - 0.18} \Rightarrow \underline{\underline{₹ 95.70/\text{Share}}}$$

$$\text{Premium/Share} = [95.70 - 75]/\text{Share}$$

$$\Rightarrow \underline{\underline{20.70/\text{Share}}}$$

$$\% \text{ Premium} \Rightarrow \frac{20.70}{75} \times 100$$

$$\Rightarrow \underline{27.60\%}$$

(iii) During the course of negotiations, ICL will push forward valuation based on growth rate method as it will lead to least cash outflow. ✓✓

QUESTION NO. 13C

Yes Ltd. wants to acquire No Ltd. and the cash flows of Yes Ltd. and the merged entity are given below:

(₹ In lacs)

Year	1	2	3	4	5
Yes Ltd.	175	200	320	340	350
Merged Entity	400	450	525	590	620

Earnings would have witnessed 5% constant growth rate without merger and 6% with merger on account of economies of operations after 5 years in each case. The cost of capital is 15%.

The number of shares outstanding in both the companies before the merger is the same and the companies agree to an exchange ratio of 0.5 shares of Yes Ltd. for each share of No Ltd.

PV factor at 15% for years 1-5 are 0.870, 0.756, 0.658, 0.572, 0.497 respectively. You are required to:

- Compute the Value of Yes Ltd. before and after merger.
- Value of Acquisition and
- Gain to shareholders of Yes Ltd.

Solution:

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0.13 C
(i) Value of Yes Ltd. before Merger:-
(3 lakhs)

<u>Year</u>	<u>CF's</u>	<u>PVF@15%</u>	<u>PV</u>
1	175	0.870	152.25
2	200	0.756	151.20
3	320	0.658	210.56
4	240	0.572	137.28
5	350	0.497	173.95

$$\sum TV = \frac{350(1+.05)}{.15-.05}$$

$$\Rightarrow 3675 \quad 0.497 \quad 1826.475$$

Value of Yes Ltd before merger $\rightarrow$ 2708.92
Lakhs

Value of Yes Ltd. after Merger:-
(Combined Value)

<u>Years</u>	<u>CF's</u>	<u>PVF@15%</u>	<u>PV</u>
1	400	0.870	348.00
2	450	0.756	340.20
3	525	0.658	345.45
4	590	0.572	337.48
5	620	0.497	308.14

$$\sum TV = \frac{620(1+.06)}{.15-.06}$$

$$\Rightarrow 7302.22 \quad 0.497 \quad 3629.20$$

$\rightarrow$ 5308.47 Lakhs

(ii) Value of Acquisition:-

$$V_{\text{Yes Ltd. after Merger}} - \text{Value of Yes Ltd. before Merger}$$

$$\Rightarrow ₹ 5308.47 \text{ Lakhs} - ₹ 2708.92 \text{ Lakhs}$$

$$\Rightarrow ₹ 2599.55 \text{ Lakhs} \checkmark$$

(iii) Gain to the Shareholders of Yes Ltd:-

W.No:- Assume No. of Shares before Merger in Yes Ltd & No. Ltd is 1

	<u>Yes</u>	<u>No</u>
No. of Shares before Merger	<u>1</u>	<u>1</u>

S/R 0.50

$$\text{Total No. of Shares after Merger} = 1 + 1 \times 0.50 = \underline{\underline{1.50}}$$

$$\text{Share of Yes Ltd. SH}^s = \frac{1}{1.50}$$

$$\text{Share of Yes Ltd. SH}^s \text{ in Merged Entity (after)} = 5308.47 \times \frac{1}{1.50} = 3538.98 \checkmark$$

$$\text{Value of Yes Ltd. before Merger} \Rightarrow 2708.92$$

$$\text{Gain to the SH}^s \text{ of Yes Ltd.} = \underline{\underline{₹ 830.06 \text{ Lakhs}}}$$

QUESTION NO. 13D

Mr. X, a financial analyst, intends to value the business of PQR Ltd. in terms of the future cash generating capacity. He has projected the following after tax cash flows :

Year :	1	2	3	4	5
Cash flows (₹ in lakh)	1,760	480	640	860	1,170

It is further estimated that beyond 5th year, cash flows will perpetuate at a constant growth rate of 8% per annum, mainly on account of inflation. The perpetual cash flow is estimated to be ₹ 10,260 lakh at the end of the 5th year.

Required:

- What is the value of the firm in terms of expected future cash flows, if the cost of capital of the firm is 20%.
- The firm has outstanding debts of ₹ 3,620 lakh and cash/bank balance of ₹ 2,710 lakh. Calculate the shareholder value per share if the number of outstanding shares is 151.50 lakh.
- The firm has received a takeover bid from XYZ Ltd. of ₹ 225 per share. Is it a good offer?

[Given: PVIF at 20% for year 1 to Year 5: 0.833, 0.694, 0.579, 0.482, 0.402]

Solution:

Q.13D

i) Value of firm: -

W.No: Cal. of Terminal Value: -

$g = 8\%$

$$CF_5 \Rightarrow 10260 \rightarrow TV$$

$$\frac{CF_5 (1+g)}{K_0 - g}$$

$$\Rightarrow \frac{10260 (1+0.08)}{20 - 0.08} \Rightarrow 92,340 \text{ Lakhs}$$

VF = ?

Year	CF's	PVIF@20%	PV (₹ Lakhs)
1	1760	0.833	1466.08



2	480	0.694	333.12
3	640	0.579	370.56
4	860	0.482	414.52
5	1170	0.402	470.34
5 TV	92340	0.402	37120.68

Value of firm as on today $\Rightarrow$ ₹ 40175.30
Lakhs

(i) Value per share:-

$\Rightarrow$ $\frac{\text{Value of firm} - \text{Value of Debt}}{\text{No. of eq. shares}}$

$\Rightarrow \frac{40175.30 - 3620 \text{ Lakhs}}{151.50 \text{ Lakhs}}$

Value/Share $\Rightarrow$ ₹ 241.29 / Share

(ii) Takeover bid of ₹ 225 / Share seems to be not a good offer, as it is lesser than the Intrinsic Value i.e. Value per share of ₹ 241.29.

LOS 16 : Calculation of Bonus Ratio

QUESTION NO. 14A

Trupti Co. Ltd. promoted by a Multinational group "INTERNATIONAL INC" is listed on stock exchange holding 84 % i.e. 63 Lakhs shares.

Profit after Tax is	₹ 4.80 Crores
Free Float Market Capitalization is	₹ 19.20 Crores



As per the SEBI guidelines promoters have to restrict their holding to 75 % to avoid delisting from the stock exchange. Board of Directors has decided not to delist the share but to comply with the SEBI guidelines by issuing Bonus shares to minority shareholders while maintaining the same P/E ratio.

Calculate:

- P/E ratio
- Bonus Ratio
- Market price of share before and after the issue of bonus shares.
- Free Float Market Capitalization of the Company after the bonus shares.

Solution:

0.14A (8mlk) 2 times

W No.1 Cal. of EPS + MPS:-

Total No. of eq. shares before Bonus:-

Promoter's	84%	63 lakh
Minority	16%	12 lakh
	<u>100%</u>	<u>75 lakh</u>

Total No. of eq. shares = $\frac{63 \text{ lakh}}{84\%} \times 100\%$

$\Rightarrow 75 \text{ lakh shares}$

EPS = $\frac{4.80 \text{ cr.}}{75 \text{ lakh}} = 6.40/\text{share}$



$$MPS = \frac{\text{Free-float MKT. Capitalization}}{\text{Free-float No. of Shares}}$$

$$\Rightarrow \frac{1920 \text{ cr.}}{(75 - 63)} = 120$$

$$\boxed{MPS \Rightarrow 160/\text{Share} \text{ before Bonus}}$$

$$(i) P/E \text{ Ratio} = \frac{MPS}{EPS} = \frac{160}{6.40} \Rightarrow 25 \text{ times}$$

(ii) Bonus Ratio:-

$$\text{Promoter's Holding} = 84\% = 63 \text{ lakhs shares}$$

75% $\rightarrow$ 63 lakhs
Shares will remain same but % of Holding will be 75%.

$$\text{Total No. of Shares} = \frac{63 \text{ lakhs}}{75\%} \times 100\% \Rightarrow 84 \text{ lakhs shares}$$

Promoter's	75%	63 lakhs
Minority	25%	21 lakhs
		<u>84 lakhs shares</u>

Bonus Shares:-

$$\begin{aligned} \text{Total Shares after Bonus} &= \text{Existing no. of Shares} \\ \Rightarrow 21 \text{ lakhs} &- 12 \text{ lakhs} \end{aligned}$$



⇒ 9 lakhs (Bonus shares)

Bonus ratio:-

$$\frac{9}{12} \Rightarrow \underline{\underline{21 \text{ lakhs}}}$$

or 3:4

Bonus shares of 9 lakhs to 12 lakhs
i.e. 3:4 means 3 Bonus shares for
4 shares held.

(ii) MPS before Bonus = ₹ 160/share

MPS after Bonus:-

$$\Rightarrow \text{EPS} \times 1/E \text{ ratio}$$

$$\Rightarrow \frac{5.714}{84} \times 25 \text{ times}$$

$$\text{MPS after Bonus} \Rightarrow \underline{\underline{₹ 142.85/\text{share}}}$$

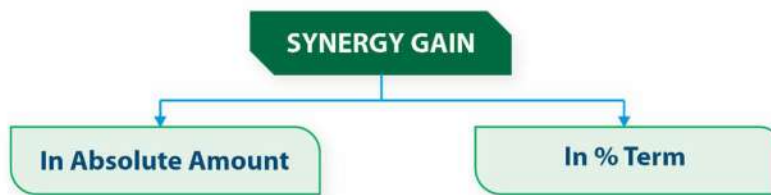
$$\text{EPS after Bonus} \Rightarrow \frac{4.20 \text{ cr.}}{84 \text{ lakhs}} \Rightarrow \underline{\underline{5.714/\text{share}}}$$

(iv) Free-float Mkt. Capitalization
after the Bonus:-

$$\Rightarrow \text{Free-float No. of shares after Bonus} \times \text{MPS after Bonus}$$

$$\Rightarrow [84 \text{ lakh} - 63 \text{ lakh}] \times 142.85/\text{share}$$

$$\Rightarrow \underline{\underline{3000 \text{ lakh or } 30 \text{ cr.}}}$$

LOS 17 : Calculation of EPS_{A+B} when Synergy Gain is Given in Question

1. EPS_{A+B} when Synergy Gain is Expressed in %

$$EPS_{A+B} = \left[\frac{(E_A + E_B) (1 + \text{Synergy Gain})}{N_A + N_B \times ER} \right]$$

2. EPS_{A+B} when Synergy Gain is Expressed in Absolute Amount

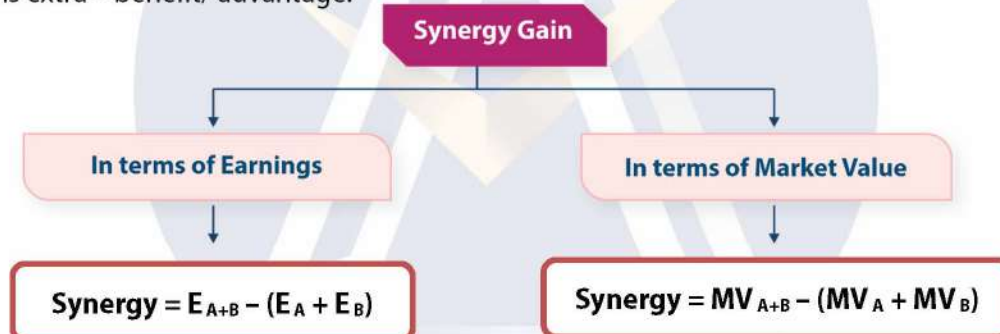
$$EPS_{A+B} = \left[\frac{E_A + E_B + \text{Synergy Gain}}{N_A + N_B \times ER} \right]$$

Note:

If question is silent regarding Synergy Gain, assume it to be NIL.

Synergy Gain – In terms of Earnings & Market Value

Synergy means extra – benefit/ advantage.


QUESTION NO. 15B

Two companies Bull Ltd. and Bear Ltd. recently have been merged. The merger initiative has been taken by Bull Ltd. to achieve a lower risk profile for the combined firm in spite of fact that both companies belong to different industries and disclose a little co- movement in their profit earning streams. Though there is likely to synergy benefits to the tune of ₹ 7 crore from proposed merger. Further both companies are equity financed and other details are as follows:

	Market Capitalization	Beta
Bull Ltd.	₹1000 crore	1.50
Bear Ltd.	₹500 crore	0.60

Expected Market Return and Risk Free Rate of Return are 13% and 8% respectively. Shares of merged entity have been distributed in the ratio of 2:1 i.e. market capitalization just before merger.

You are required to:

- Calculate return on shares of both companies before merger and after merger.
- Calculate the impact of merger on Mr. X, a shareholder holding 4% shares in Bull Ltd. and 2% share of Bear Ltd.

Solution:

0.15B

(a) Expected Return using CAPM:-

(Before Merger)

$$\text{Dull Ltd.} = E(R) = R_f + \beta(R_m - R_f)$$

$$E(R) \Rightarrow 8\% + 1.5[13\% - 8\%]$$

$$\Rightarrow \underline{15.5\%}$$

$$\text{Deer Ltd.} \Rightarrow 8\% + 0.60[13\% - 8\%]$$

$$\Rightarrow \underline{11\%}$$

(After Merger)

Beta of Merged Entity:-

Weighted Avg. of Beta (2:1)

$$\Rightarrow 1.5 \times \frac{2}{3} + 0.60 \times \frac{1}{3} \Rightarrow \underline{1.2 \text{ times}}$$

$$E(R) = 8\% + 1.20[13\% - 8\%]$$

$$\Rightarrow \underline{14\%}$$

(b) Impact of Merger on Mr. X:-

% of Holding before Merger:-

Dull Ltd. 4% of 1000 cr. $\Rightarrow$ 40 cr.

Deer Ltd. 2% of 500 cr. $\Rightarrow$ 10 cr.

50 cr. ✓

Value of Holding of Mr. X after Merger:-

After Merger % of Holding: 2:1

$$4\% \times \frac{2}{3} + 2\% \times \frac{1}{3} \Rightarrow \underline{\underline{3.33\%}}$$

Value of Mr. X Holdings after Merge:-

$$\Rightarrow 1550 \text{ cr.} \times 3.33\%$$

$$\Rightarrow \underline{\underline{51.62 \text{ cr.}}}$$

W.No.1 Mkt. Value after Merge:-

Example

Gull Ltd. $1000 \text{ cr.} \times 15.5\% \Rightarrow \underline{\underline{155 \text{ cr.}}}$

Deer Ltd $500 \text{ cr.} \times 11\% \Rightarrow \underline{\underline{55 \text{ cr.}}}$

SL $\Rightarrow \underline{\underline{7 \text{ cr.}}}$

Example after Merge. $\underline{\underline{217 \text{ cr.}}}$

K_0 after Merge = $\underline{\underline{14\%}}$

Market Capitalization after Merge:-

$$\frac{217 \text{ cr.} - - -}{.14}$$

$$\Rightarrow \underline{\underline{1550 \text{ cr.}}}$$

Extra point:-

Gain to Mr. X

Holding after Merge = 51.62 cr.

Holding before Merge = 50.0 cr.

Cash $\underline{\underline{1.62 \text{ cr.}}}$

LOS 18 : True Cost & True Benefit of Merger
True Cost & Benefit of Merger
Case 1: When Merger is Financed by Cash
For Acquiring company (A Ltd.)

Cost to A Ltd.
= Cash paid to B Ltd. – $MV_{B Ltd.}$ received

Benefit of Merger (Synergy Gain)
= $MV_{A+B} - (MV_{A Ltd.} + MV_{B Ltd.})$

Net Benefit (NPV) = Benefit – Cost

For Target Company (B Ltd.)

Benefit (Net Benefit)
= Cash Received – $MV_{B Ltd.}$ sacrificed

Case 2: When Merger is Financed by Stock
For Acquiring company (A Ltd.)

Cost to A Ltd.
= $MV_{A+B} \times \% \text{ Holding of B Ltd.} - MV_{B Ltd.}$ received

Benefit of Merger (Synergy Gain)
= $MV_{A+B} - (MV_{A Ltd.} + MV_{B Ltd.})$

Net Benefit (NPV) = Benefit – Cost

For Target Company (B Ltd.)

Benefit (Net Benefit)
= $MV_{A+B} \times \% \text{ Holding of B Ltd.} - MV_{B Ltd.}$ sacrificed

Note:

Cost of A Ltd. = Benefit for B Ltd.

QUESTION NO. 16C

Given is the following information:

	Day Ltd.	Night Ltd.
Net Earnings	₹ 5 crores	₹ 3.5 crores
No. of Equity Shares	10,00,000	7,00,000

The shares of Day Ltd. and Night Ltd. trade at 20 and 15 times their respective P/E ratios.

Day Ltd. considers taking over Night Ltd. By paying ₹ 55 crores considering that the market price of Night Ltd. reflects its true value. It is considering both the following options:

- I. Takeover is funded entirely in cash.
- II. Takeover is funded entirely in stock.

You are required to calculate the cost of the takeover and advise Day Ltd. on the best alternative.

Solution:

Q16C (5 marks)

<u>W.No:</u>	<u>Day Ltd.</u>	<u>Night Ltd.</u>
Net Earnings	5 cr.	3.5 cr.
No. of eq. shares	1,00,000	7,00,000
EPS	50/share	50/share
P/E ratio	20 times	15 times
MPS	1000/share	750/share

Mkt. Value 1000,00,000 52,50,00,000
100 cr = 52.50 cr

Qn I: If the Merger is funded by Cash:-

Cost to Day Ltd:-

Cash paid to Night Ltd — MV Night Ltd.
received

⇒ 55 cr. — 52.50 cr.

⇒ < 2.5 cr.

Qn II: If the takeover is funded by
Stock:-

No. of eq. shares issued by Day Ltd to
Night Ltd.

$$\Rightarrow \frac{55 \text{ cr.}}{1000/\text{Share}} \Rightarrow 5,50,000 \text{ Shares}$$

% of Holding of Night Ltd. Still in Merged Entity:

$$\Rightarrow \frac{5,50,000}{10,00,000 + 5,50,000} \times 100$$

$$\Rightarrow \underline{\underline{35.48\%}}$$

True Cost of Merger to Day Ltd.:-

$$\Rightarrow \text{MV}_{\text{Day+Night}} \times \% \text{ of Holding} - \text{MV}_{\text{Night}} \text{ received}$$

$$\Rightarrow \left[\text{MV}_{\text{Day}} + \text{MV}_{\text{Night}} + 55 \right] \times \% \text{ of Holding} - \text{MV}_{\text{Night}} \text{ received}$$

$$\Rightarrow \left[10000,00,000 + 5250,00,000 + 0 \right] \times 35.48$$

$$(-) 5250,00,000 \checkmark$$

$$\Rightarrow 152.50 \text{ cr.} \times 35.48\% - 52.50 \text{ cr.}$$

$$\Rightarrow 54.107 - 52.50 \text{ cr.}$$

$$\Rightarrow \underline{\underline{1.607 \text{ cr.}}}$$

Since, true cost to Day Ltd is least in case of takeover is funded by stock, so, it is advisable to Day Ltd. that it should go for funding the takeover by stock.

**QUESTION NO. 16D**

Long Ltd., is planning to acquire Tall Ltd., with the following data available for both the companies:

	Long Ltd.	Tall Ltd.
Expected EPS	₹ 12	₹ 5
Expected DPS	₹ 10	₹ 3
No. of Shares	30,00,000	18,00,000
Current Market Price of Share	₹ 180	₹ 50

As per an estimate Tall Ltd., is expected to have steady growth of earnings and dividends to the tune of 6% per annum. However, under the new management the growth rate is likely to be enhanced to 8% per annum without additional investment.

You are required to:

Calculate the net cost of acquisition by Long Ltd., if ₹ 60 is paid for each share of Tall Ltd.

If the agreed exchange ratio is one share of Long Ltd., for every three shares of Tall Ltd., in lieu of the cash acquisition as per (i) above, what will be the net cost of acquisition?

Calculate Gain from acquisition.

Solution:

Q.16D (a) (P. marks)

(i) Net Cost of Acquisition:-
(If Merger is financed by Cash)

$$\Rightarrow \text{Cash paid to Tall Ltd.} - \text{MV of Tall Ltd. received}$$

$$\Rightarrow [60 \times 18,00,000] - [50 \times 18,00,000]$$

$$\Rightarrow 1080,00,000 - 900,00,000$$

$$\Rightarrow \text{Net Cost of Acq. of Tall Ltd.}$$

$$\Rightarrow \underline{180,00,000}$$

(ii) Net Cost of Acquisition:-
(If Merger is financed by stock)

$$\underline{\underline{S/R \ 1:3}}$$

$$\begin{aligned} \text{No. of eq. shares issued} &= \frac{18,00,000}{3} \\ &\Rightarrow \underline{\underline{600,000 \text{ shares}}} \end{aligned}$$

$$\begin{aligned} \text{Total Number of shares after merger} &= 390,000 + 600,000 \\ &\Rightarrow \underline{\underline{990,000 \text{ shares}}} \end{aligned}$$

W.No.1:- Cal. of K_e = ?

$$P_0 = \frac{D_1}{K_e - g_c} \Rightarrow 50 = \frac{3}{K_e - .06}$$

$$\boxed{K_e \Rightarrow 12\%}$$

$$\underline{\underline{\text{New } g = 8\%}}$$

$$\begin{aligned} \text{Revised } P_0 \Rightarrow \frac{D_1}{K_e - g_c} &= \frac{3}{.12 - .08} \\ (\text{Tall Ltd.}) &\Rightarrow \underline{\underline{\text{Rs } 75/\text{share}}} \end{aligned}$$

W.No.2 Cal. of $MV_{\text{Long}} + \text{Tall Ltd.}$:-

$$\Rightarrow MV_L + MV_T + S_4$$

$$\Rightarrow [302 \times 180] + [182 \times 75] + 0$$

$$\Rightarrow \underline{\underline{6750 \text{ lakh}}}$$

$$\begin{aligned} \text{Value/Share after Merger} &\Rightarrow \frac{6750 \text{ lakh}}{36 \text{ lakh}} \Rightarrow \underline{\underline{187.5/\text{share}}} \end{aligned}$$

Net Cost of Acquisition: (Stock Takeover)

$$MV_{L+T} \times \% \text{ of Holding} - \overbrace{MV_{\text{Tall}} \text{ Ltz.}}^{\text{Received}}$$

$$\Rightarrow 6750 \text{ lakh} \times \left[\frac{60}{360} \right] - (50 \times 180)$$

$$\Rightarrow 6750 \text{ lakh} \times 16.67\% - 9000$$

$$\Rightarrow 1125.225 \text{ lakh} - 900 \text{ lakh}$$

$$\Rightarrow 225.225 \text{ lakh}$$

OK

$$[187.50 \times 6 \text{ lakh}] - 900 \text{ lakh}$$

$$\Rightarrow 1125 - 900 \Rightarrow 225 \text{ lakh}$$

(ii) Cal. of Cash from Acquisition:-
(SQ)

(SQ in terms of MV)

$$\Rightarrow V_{\text{Long+Tall after Merge}} - [V_L + V_T]$$

$$\Rightarrow 6750 \text{ lakh} - [(180 \times 30) + 50 \times 180]$$

$$\Rightarrow 6750 \text{ lakh} - [5400 + 900] \text{ lakh}$$

$$\Rightarrow 6750 \text{ lakh} - 6300 \text{ lakh}$$

$$\Rightarrow 450 \text{ lakh} \checkmark$$

LOS 20 : Financial Restructuring/ Internal Re-Construction

- ✚ Financial restructuring refers to a kind of internal changes made by the management in Assets and Liabilities of a company with the consent of its various stakeholders. This is a suitable mode of restructuring for corporate entities who have suffered from sizeable losses over a period of time. Consequent upon losses the share capital or net worth of such companies get substantially eroded. In fact, in some cases, the accumulated losses are even more than the share capital and thus leading to negative net worth, putting the firm on the verge of liquidation.
- ✚ In order to revive such firms, financial restructuring is one of the techniques to bring into health such firms who are having potential and promise for better financial performance in the years to come. To achieve this desired objective, such firms need to re-start with a fresh balance sheet free from losses and fictitious assets and show share capital at its real true worth.

Impact of Financial Restructuring

1. Benefits to XYZ Ltd.
 - a) Reduction in Liabilities
 - b) Revaluation of Assets

Total Benefits

2. Amount of Benefit will be utilized to Written Off Fictitious Assets, Profit & Loss Dr. Bal., Provision for Doubtful Debts and over-valued Assets.

Note: In case amount to be written-off is less than the total benefit of re-structuring, the balance amount will be transferred to Capital Reserve account.

QUESTION NO. 18B

The following is the Balance-sheet of Grape Fruit Company Ltd as on March 31st 2011.

Liabilities		Assets	(₹ in lacs)
6 lacs equity shares of ₹100/- each	600	Land & Building	200
2 lacs 14% Preference shares of ₹100/- each	200	Plant & Machinery	300
13% Debentures	200	Furnitures & Fixtures	50
Debenture Interest accrued and Payable	26	Inventory	150
Loan from Bank	74	Sundry debtors	70
Trade Creditors	340	Cash at Bank	130
		Preliminary Expenses	10
		Cost of Issue of debentures	5
		Profit & Loss A/c	525
	1440		1440

The Company did not perform well and has suffered sizable losses during the last few years. However, it is now felt that the company can be nursed back to health by proper financial restructuring and consequently the following scheme of reconstruction has been devised:

- (i) Equity shares are to be reduced to ₹ 25/- per share, fully paid up;
- (ii) Preference shares are to be reduced (with coupon rate of 10%) to equal number of shares of ₹50 each fully paid up.
- (iii) Debenture holders have agreed to forego interest accrued to them. Beside this, they have agreed to accept new debentures carrying a coupon rate of 9%.
- (iv) Trade creditors have agreed to forgo 25 per cent of the amount due to them.



- (v) The company issues 6 lac of equity shares at ₹25/- each and the entire sum was to be paid on application. The existing shareholders have agreed to subscribe to the new issue.
- (vi) While Land and Building is to be revalued at ₹450 lacs, Plant & Machinery is to be written down to ₹120 lacs. A provision amounting to ₹15 lacs is to be made for bad and doubtful debts.

You are required to

- a) Show the impact of financial restructuring/re-construction
- b) Prepare the fresh balance sheet after the reconstructions is completed on the basis of the above proposals.

Solution:

Q.18B

(i) Impact of Financial Restructuring:-

(a) Benefits to Grape Fruit Ltd:-

(i) Reduction in Liabilities:- (₹ Lakhs)

⇒ Reduction in Equity Share Capital	450
[6 lakh shares × ₹75/share]	
⇒ Reduction in Preference Share Capital	100
[2 lakhs × ₹50/share]	
⇒ Waiver of o/s interest	25
⇒ Waiver from Trade Creditors	85
[340 lakhs × 25%]	
	<u>660</u>

(ii) Revaluation of Assets



Appreciation of L & B 250
 $[450 - 200]$ lakh

Total (A) $\Rightarrow$ 911

(b) Amount of ₹ 911 lakhs utilized to
written-off losses, fictitious assets
& over-valued assets:-

Written off P & L A/c 525
 Cost of Issue of Deb. 5
 Preliminary Expenses 10
 Provision for Bad & Doubtful Debts 15
Revaluation of Plant & Machinery:- 180
 $[300 \text{ lakhs} - 120 \text{ lakh}]$

Total $\rightarrow$ (B) 735

Capital Reserve [A - B]
 $[911 - 735]$ 176 lakh

Liabilities	Amount	Assets	Amount
12 lakhs Equity Shares @ ₹ 25 each	300	Land & Building	450
10% Pref. Shares of ₹ 50 each (2 lakh x 50)	100	Plant & Machinery	120
9% Debentures	200	Furniture & Ffx.	50
Capital Reserve	176	Inventory	150
Loan from Bank	74	Sundry Debtors	70
Creditors	255	Prov. for B & D Debts	15
		Cash at Bank (#)	280
		(Bal. fig.)	

<u>1105</u>	<u>1105</u>
# G/L at Bank:-	
of Bal.	130 Lakh
+ Sale Proceeds from New equity issue [6 Lakh × 25]	150 Lakh
Cl. Balance	<u>280 Lakh</u>

LOS 21 : Demerger

- A Corporate strategy to sell-off subsidiaries or divisions of a company. The act of splitting off a part of an existing company to become a new company, which operates completely separate from the original company.
- Shareholders of the original company are usually given an equivalent stake of ownership in the new company.
- A demerger is often done to help each of the segments operate more smoothly, as they can now focus on a more specific task.

QUESTION NO. 19

The following information is relating to Fortune India Ltd. having two division, viz. Pharma Division and Fast Moving Consumer Goods Division (FMCG Division). Paid up share capital of Fortune India Ltd. is consisting of 3,000 Lacs equity shares of Re. 1 each. Fortune India Ltd. decided to de merge Pharma Division as Fortune Pharma Ltd. w.e.f. 1.4.2005. Details of Fortune India Ltd. as on 31.3.2005 and of Fortune Pharma Ltd. as on 1.4.2005 are given below:

Particulars	Fortune Pharma Ltd. (₹ in Lakhs)	Fortune India Ltd. (₹ in Lakhs)
Outside Liabilities		
Secured Loans	400	3,000
Unsecured Loans	2,400	800
Current Liabilities & Provisions	1,300	21,200
Assets		
Fixed Assets	7,740	20,400
Investments	7,600	12,300
Current Assets	8,800	30,200
Loans & Advances	900	7,300
Deferred Tax	60	—
Miscellaneous Expenses Outstanding	—	(200)

Board of Directors of the Company has decided to issue necessary equity shares of Fortune Pharma Ltd. of Re. 1 each, without any consideration to the shareholders of Fortune India Ltd. For that purposes following points are to be considered

1. Transfer of Liabilities & Assets at Book value.
2. Estimated Profit for the year 2005-06 is ₹ 11,400 Lakh for Fortune India Ltd. & ₹ 1,470 lacs for Fortune Pharma Ltd.
3. Estimated Market Price of Fortune Pharma Ltd. is ₹ 24.50 per share.
4. Average P/E Ratio of FMCG sector is 42 & Pharma sector is 25, which is to be expected for both the companies.

Calculate:

- a) The Ratio in which shares of Fortune Pharma are to be issued to the shareholders of Fortune India Ltd.
- b) Expected Market price of Fortune India Ltd.
- c) Book Value per share of both the Companies immediately after Demerger.

Solution:

Q.19 (10 marks)

<u>FMCG</u> <u>Fortune India Ltd.</u>	<u>Fortune Pharma Ltd.</u>
PAT = 11400 Lakh.	PAT = 1470 Lakh
P/E = 42 times	P/E = 25 times
(i) No. of eq. Shares = 33000 Lakh	(i) No. of Shares = ? 1500 Lakh
(ii) <u>MPS = ?</u>	(ii) <u>ΔVPS = ?</u>
(iii) <u>ΔVPS = ?</u>	
(i) <u>Calculation of Share Exchange Ratio:-</u>	
$P/E \text{ Ratio} = \frac{MPS}{EPS}$	

$$EPS = \frac{MPS}{P/E \text{ Ratio}} \Rightarrow \frac{24.50}{25} \\ \Rightarrow 0.98/\text{Share}$$

$$EPS = \frac{PAT/CFE}{\text{No. of eq. Shares}}$$

$$\text{No. of eq. Shares} = \frac{1470}{0.98} \Rightarrow 1500 \text{ lakh shares}$$

$$S/R \Rightarrow \frac{1500}{3000} \checkmark \\ \boxed{1:2} \\ \text{i.e. } 0.50:1$$

0.5 shares issued to the shareholder's of Fortune India Ltd. for each share held.

(ii) MPS of Fortune India Ltd.:-
(FMCG)

$$EPS = \frac{PAT}{\text{No. of eq. Shares}} \\ \Rightarrow \frac{11400 \text{ lakh}}{3000 \text{ lakh shares}} \\ \Rightarrow 3.8/\text{Share}$$

$$P/E \text{ Ratio} \Rightarrow \frac{MPS}{EPS}$$

$$MPS = EPS \times P/E \text{ Ratio} \\ \Rightarrow 3.8 \times 42 \Rightarrow 159.60/\text{Share}$$

(iii) DUPS:-

(I lakh)
(CRS Rs)

	Fortune Indit FMCQ + Pharma	Fortune Pharma CL	FMCQ
Total Assets	70,000	25,100	44,900
(-) External Liab.	25,000	900	20,900
Net Worth	45,000	21,000	24,000
÷ No. of Shares		1,500	3,000
AVPS		14/Share	8/Share

LOS 22 : Banking Merger & Acquisition

CAR/CRAR (Capital Adequacy Ratio/ Capital Risk Weight Asset Ratio)

The capital adequacy ratio (CAR) is an indicator of how well a bank can meet its obligations. Also known as the capital-to-risk weighted assets ratio (CRAR), the ratio compares capital to risk-weighted assets and is watched by regulators to determine a bank's risk of failure. It's used to protect depositors and promote the stability and efficiency of financial systems around the world.

$$\text{CAR} = \frac{\text{Capital}}{\text{Risk Weighted Assets}}$$

- CAR is critical to ensure that banks have a large enough financial cushion to absorb a reasonable amount of losses before they become insolvent.
- CAR is used by regulators to determine capital adequacy for banks and to run stress tests.
- Tier 1 and tier 2 capital are both used to measure CAR.

Tier-1 Capital

Tier-1 capital, or core capital, consists of equity capital, ordinary share capital, intangible assets and audited revenue reserves.

Tier-2 Capital

Tier-2 capital comprises unaudited retained earnings, unaudited reserves, and general loss reserves.

Risk-weighted asset (RWA)

Risk-weighted asset (also referred to as RWA) is a bank's assets weighted according to risk.

QUESTION NO. 20A

Bank 'R' was established in 2005 and doing banking in India. The bank is facing DO OR DIE situation. There are problems of Gross NPA (Non-Performing Assets) at 40% & CAR/CRAR (Capital Adequacy Ratio/ Capital Risk Weight Asset Ratio) at 4%. The net worth of the bank is not good. Shares are not traded regularly. Last week, it was traded @ ₹ 8 per share.

RBI Audit suggested that bank has either to liquidate or to merge with other bank.

Bank 'P' is professionally managed bank with low gross NPA of 5%. It has Net NPA as 0% and CAR at 16%. Its share is quoted in the market @ ₹ 128 per share. The board of directors of bank 'P' has submitted a proposal to RBI for takeover of bank 'R' on the basis of share exchange ratio.

The Balance Sheet details of both the banks are as follows:

	Bank 'R' Amt. in ₹ lakhs	Bank 'P' Amt. in ₹ lakhs
Paid up share capital(₹10)	140	500
Reserves & Surplus	70	5,500
Deposits	4,000	40,000
Other liabilities	890	2,500
Total Liabilities	5,100	48,500
Cash in hand & with RBI	400	2,500
Balance with other banks	—	2,000
Investments	1,100	15,000
Advances	3,500	27,000
Other Assets	100	2,000
Total Assets	5,100	48,500

It was decided to issue shares at Book Value of Bank 'P' to the shareholders of Bank 'R'.

All assets and liabilities are to be taken over at Book Value.

For the swap ratio, weights assigned to different parameters are as follows:

Gross NPA	30%
CAR	20%
Market price	40%
Book value	10%

- What is the swap ratio based on above weights?
- How many shares are to be issued?
- Prepare Balance Sheet after merger.
- Calculate CAR & Gross NPA % of Bank 'P' after merger.

Solution:

Q.20A & (a) 3 times (10 marks)

(a) Calculation of Swap Ratio:-

W.No.1 (i) Cal. of Book Value / Share:-

$$BVPS = \frac{ESC + RLS}{\text{no. of eq. shares}}$$

Bank 'R' (Target)

$$\Rightarrow \frac{140 + 70 \text{ lakh}}{14 \text{ lakh}} \Rightarrow 15 / \text{Share}$$

Bank 'P' (Acquiring:-)

$$\Rightarrow \frac{500 + 5500 \text{ lakh}}{50 \text{ lakh}} \Rightarrow 120 / \text{Share}$$

(i) Based on Gross NPAs :-

(Negative Parameter)

$$\Rightarrow \frac{\text{Gross NPA's Acquiring Co. (P)}}{\text{Gross NPA's Target Co. (R)}}$$

$$\Rightarrow \frac{5}{40} \Rightarrow 0.125 \times 30$$

$$\Rightarrow \underline{\underline{0.0375}}$$

(ii) Based on CAR :-

$$= \frac{\text{CAR of Target}}{\text{CAR of Acq.}} \Rightarrow 0.25 \times 20$$

$$\Rightarrow \frac{4}{16}$$

$$\Rightarrow \underline{\underline{0.05}}$$

(iii) Based on MPS :-

$$\frac{\text{MPS of Target}}{\text{MPS of Acq.}} \Rightarrow \frac{8}{120} \Rightarrow 0.0625 \times 40$$

$$\Rightarrow \underline{\underline{0.025}}$$

(iv) Based on DVS :-

$$\Rightarrow \frac{\text{DVS of Target}}{\text{DVS of Acq.}}$$

$$\Rightarrow \frac{15}{120}$$

$$\Rightarrow 0.125 \times 10$$

$$\Rightarrow \underline{\underline{0.0125}}$$

Swap Ratio

$$\underline{\underline{0.125 \text{ : } 1}}$$

(b) No. of eq. shares to be issued :-

$$\Rightarrow \frac{140 \text{ lakh}}{10} = 14 \text{ lakh shares}$$

$$\Rightarrow 14 \text{ lakh} \times 0.125$$

$$\Rightarrow \underline{1.75 \text{ lakh shares issued to RLT by LTL}}$$

(c) Balance sheet as at --- (F. Lakh)

Liabilities	Capital Charges Amount	Assets	Amount
Equity share capital	517.50	Cap in hand & with RES (400 + 2500)	2900
Reserves & surplus	5500	Balance with other bank	2000
Capital Reserve	192.50	Investments [15000 + 1100]	16100
Deposits [4000 + 40,000]	44000	Advanced [3500 + 27000]	30500
Other <u>liab.</u>	3390		
[890 + 2500]		Other Assets [100 + 2000]	2100
	<u>59,600</u>		<u>59,600</u>

W.No:1 Equity share Capital

$$[50 \text{ lakh} + 1.75 \text{ lakh}] \times 10 \Rightarrow \underline{517.50 \text{ lakh}}$$

W.No:2 Book Value of RLT.

$$\frac{[140 + 70] \text{ [ESC + RES]}}{2} = \underline{210 \text{ lakh}}$$

(→) Value of shares issued = 17.5 lakh

Capital Reserve 192.50 lakh

(d) (i) $\text{CAR} = \frac{\text{Total Capital}}{\text{Risk Weighted Assets}}$

<u>Bank R'</u>	<u>Bank P'</u>
CAR 4%	16%
Capital 210 lakh	6000 lakh
Risk-weighted Assets 5250 lakh	37500 lakh

Merged Entity.

$$\text{Total Capital} \Rightarrow [6000 + 210] = 6210$$

$$\text{Risk Weighted Assets} \Rightarrow [5250 + 37500] = 42750$$

$$\text{CAR} = \frac{\text{TC}}{\text{RWA}} = \frac{6210}{42750}$$

$$\Rightarrow \underline{\underline{14.52\%}}$$

(ii) Gross NPA :-

	<u>Bank R'</u>	<u>Bank P'</u>
Gross NPA(%)	40%	5%
Advances	3500	27000
Gross NPA (Amt.)	1400 lakh	1350 lakh

Merged Entity

$$\text{Advances} [3500 + 27000] \Rightarrow 30500$$

$$\text{Gross NPA's} [1400 + 1350] \Rightarrow 2750$$

$$\text{Gross NPA Ratio} \Rightarrow \frac{\text{GNPA}}{\text{Advances}} \times 100$$

$$\Rightarrow \underline{\underline{\frac{2750}{30500} \times 100}}$$

$$\frac{30,500}{30,500 \times 100} = 9.02\%$$

LOS 23: LEVERAGED BUYOUT (LBO) / MANAGEMENT BUYOUT

QUESTION NO. 21

Personal Computer Division of Distress Ltd., a computer hardware manufacturing company has started facing financial difficulties for the last 2 to 3 years. The management of the division headed by Mr. Smith is interested in a buyout on 1 April 2013. However, to make this buy-out successful there is an urgent need to attract substantial funds from venture capitalists.

Ven Cap, a European venture capitalist firm has shown its interest to finance the proposed buy-out. Distress Ltd. is interested to sell the division for ₹ 180 crore and Mr. Smith is of opinion that an additional amount of ₹ 85 crore shall be required to make this division viable. The expected financing pattern shall be as follows:

Source	Mode	Amount (₹ Crore)
Management	Equity Shares of ₹ 10 each	60.00
VenCap VC	Equity Shares of ₹ 10 each	22.50
	9% Debentures with attached warrant of ₹ 100 each	22.50
	8% Loan	160.00
Total		265.00

The warrants can be exercised any time after 4 years from now for 10 equity shares @ ₹ 120 per share.

The loan is repayable in one go at the end of 8th year. The debentures are repayable in equal annual installment consisting of both principal and interest amount over a period of 6 years.

Mr. Smith is of view that the proposed dividend shall not be kept more than 12.5% of distributable profit for the first 4 years. The forecasted EBIT after the proposed buyout is as follows:

Year	2013-14	2014-15	2015-16	2016-17
EBIT (₹ crore)	48	57	68	82

Applicable tax rate is 35% and it is expected that it shall remain unchanged at least for 5-6 years. In order to attract VenCap, Mr. Smith stated that book value of equity shall increase by 20% during above 4 years. Although, VenCap has shown their interest in investment but are doubtful about the projections of growth in the value as per projections of Mr. Smith. Further VenCap also demanded that warrants should be convertible in 18 shares instead of 10 as proposed by Mr. Smith.

You are required to determine whether or not the book value of equity is expected to grow by 20% per year. Further if you have been appointed by Mr. Smith as advisor then whether you would suggest to accept the demand of VenCap of 18 shares instead of 10 or not.

Solution:

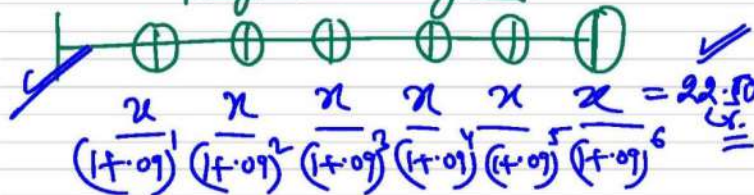
Q.21 (7)

W.No.1 Cal. of Instalment:-

Equated Annual Instalment:-

Ant. of Debentures = 22.50 cr.
 Intt rate $\Rightarrow$ 9% p.a.
 time = 6 years

Inflow = Outflow



$$x [PVA @ 9\%, 6 \text{ years}] = 22.50 \text{ cr}$$

$$(EAI) x \Rightarrow \frac{\text{Ant. of Loan}}{PVA @ 9\%, 6 \text{ years}}$$

$$EAI \Rightarrow \frac{22.50 \text{ cr.}}{PVA @ 9\%, 6 \text{ years}} \quad (ROI)$$

$$EAI \Rightarrow \frac{22.50 \text{ cr.}}{4.486} \Rightarrow 5.0156 \text{ cr.}$$

$\Downarrow$ p.a.
 It includes
 Principal + Intt

Cal. of Interest & Principal:- (₹ cr.)

Year	Cl. Bal.	Intt. @ 9%	Intt.	Prinpal	Cl. Bal.
	A	B	C	(C-B)=D	A-D
1	22.50	2.025	5.0156	2.9906	19.5094
2	19.5094	1.756	5.0156	3.2596	16.2498
3	16.2498	1.462	5.0156	3.5536	12.6962
4	12.6962	1.143	5.0156	3.8726	8.8236

(₹ cr.)

⇒ Statement showing the Value of Equity:-

	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>2016-17</u>
EBIT	48	57	68	82
(-) Intt @ 9%	2.025	1.756	1.462	1.143
(-) Intt @ 8%	12.80	12.80	12.80	12.80
EBT	33.175	42.444	53.738	68.057
(-) Tax @ 25%	11.611	14.855	18.808	23.820
PAT	21.564	27.589	34.930	44.237
(-) Div. @ 12.5%	2.695	3.449	4.366	5.530
R4S	18.8685	24.1400	30.5640	38.7070
bal forward	0	18.8685	43.0085	73.5725
CR	18.8685	43.0085	73.5725	112.2795
+ Intt	82.50	82.50	82.50	82.50
VE	101.3685	125.5085	156.0725	194.7795

<u>CAGR:-</u>	Year 0	82.50
	Year 1	101.3685
	Year 2	125.5085
	Year 3	156.0725
	Year 4	194.7795

$$FV = PV(1+r)^{n-1}$$

$$194.7795 = 82.50(1+r)^{5-1}$$

$$\left[\frac{194.7795}{82.50} \right]^{1/4} - 1 \Rightarrow g$$

$$g \Rightarrow 23.96\% \text{ p.a.}$$

This growth rate is higher than 20% as projected by Mr. Smith.

(b) If the condition of Venture Capitalist (Vencap) for 18 shares is accepted, the expected shareholding after 4 years shall be as follows:-

$$1) \text{ No. of shares held by management} = \frac{60 \text{ cr.}}{10} = 6 \text{ cr.}$$

$$2) \frac{\text{No. of shares held by Vencap}}{\frac{22.50}{10}} = \frac{2.25 \text{ cr.}}{10}$$

(+)

$$\text{No. of shares held by Vencap after 4 years from warrants} = 4.05 \text{ cr. shares}$$

$$\left[\frac{22.50}{100} \right] \times 18$$

$$\text{Total Holding of Vencap after 4 years} = \frac{6.30 \text{ cr. shares}}{10}$$

⇒ It is likely that Mr. Smith may not accept this condition of Vencap as this may result in losing their majority ownership & control.

Notes